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The Bank is not necessarily in agreement with the views expressed in articles appearing in this Review. They are published in order to stimulate free discussion and full inquiry.

The Real Incidence of Personal Taxation

By F. W. Paish

THERE is a general impression that direct taxation on personal incomes, which during the war was raised to the highest level deemed bearable even under conditions of the greatest emergency, has since the war been greatly reduced for all levels of income. In reality, as will be shown, the reductions in tax rates have not meant anything like a corresponding alleviation of the real tax burden, for the reason that the persistent inflation of all money values has steadily been pushing large numbers of people into higher income brackets, subject to higher rates of tax.

On the face of it, the reductions in rates of taxation have been impressive. The standard rate of income tax has been reduced from 10s. in the pound to 8s. 6d. without any corresponding increase in surtax. Earned income relief has been increased from one-tenth of the first £2,000 to two-ninths of the first £2,025. The single allowance has been increased from £100 to £140, the married allowance from £150 to £240, and the child allowance from £45 to £100. The effect of these and other concessions can be seen in Table 1 on page 4, and Chart I overleaf, which show the changes in the proportions of income before tax paid in income tax and surtax by a married man with two children at a number of different levels of money income.

This makes it clear that for the family man with a wholly earned income the proportions of tax paid on all levels of money income have fallen very substantially since the war. Tax on an income of £600 a year has fallen from 20 per cent. almost to nothing. On £1,000 a year it has fallen by almost three-quarters. On £2,000 a year it has been reduced by almost a half, and even on £10,000 a year the fall is over ten per cent.

The reductions in rates of tax on other classes of taxpayers, though less than for the family man with a wholly earned

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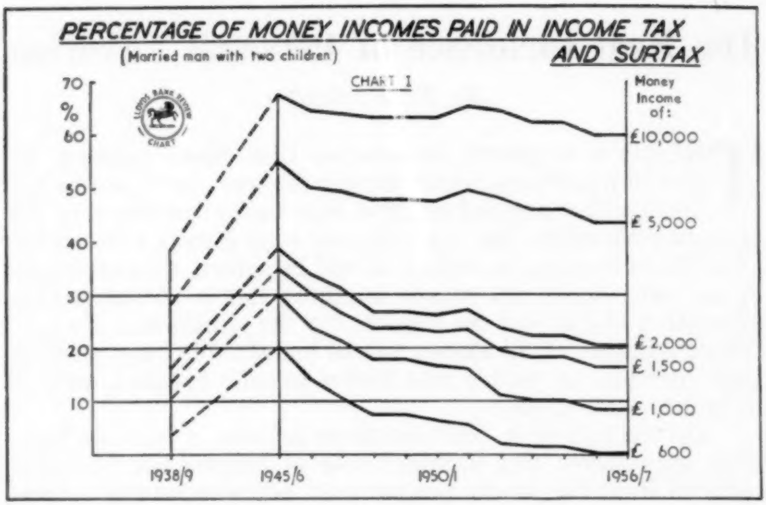
Mr. Paish is Professor of Economics (with special reference to Business Finance) in the University of London. Many of the statements in the text of this article are based upon calculations made by Professor Paish which for reasons of space it has been impossible to reproduce in full. Abridged versions of these tables are given in the text, which it is hoped will provide all the information required by the majority of readers. A limited number of sets of the complete tables is, however, available and copies will be supplied on application to the Editor of the Review.

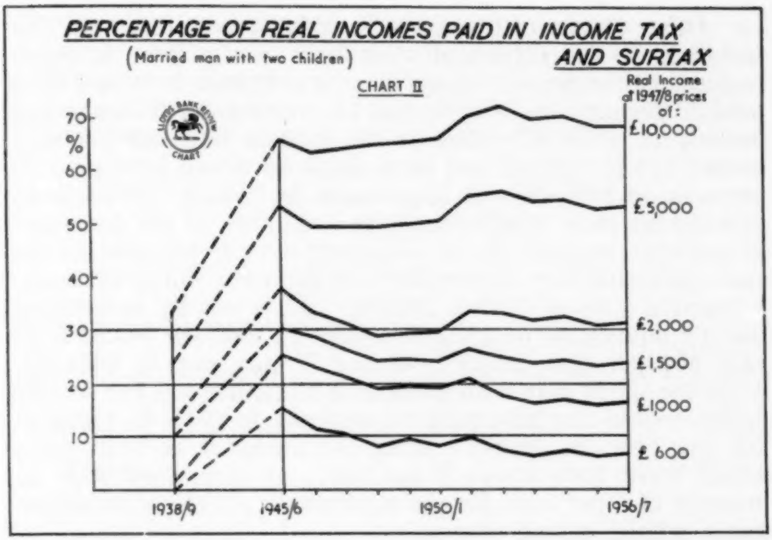


income, have still been substantial. For instance, a married man with two children and an income of £600 a year derived wholly from investments would have paid 25 per cent. in tax in 1945–46 and only 5 per cent. in 1956–57. A single man with the same income, but wholly earned, would have paid 13 per cent. in 1956–57, as against 24 per cent. in 1945–46. At £2,000 a year the reduction would have been from 42 to 30 per cent. for the family man with an investment income and from 40 to 27 per cent. for the bachelor with an income wholly earned. At £10,000 a year the corresponding changes have been from 68 to 62 per cent. and from 68 to 61 per cent. respectively.

TAX ON REAL INCOMES

Unfortunately, further examination shows, as has been mentioned above, that these apparent reductions in the tax burden are partly or wholly illusory. During a period of rising prices, a man who succeeds in increasing his income before tax by an amount just enough to offset the rise in the cost of living, so that his *real* income before tax remains constant, is continually tending to move into higher tax brackets. With a system of progressive taxation, he will therefore pay in tax a constantly increasing proportion of a constant real income, even if rates of tax are not raised.

This tendency for rising prices to lift constant real incomes into higher tax brackets has during the last ten years gone far



towards offsetting the benefits of lower rates of tax. The net results of the opposing tendencies are set out in Table II, and Chart II, which show the proportions paid in tax—also by a married man with two children and a wholly earned income—at different levels of real income corresponding to the money incomes shown in Table I for the year 1947–48.

This table shows a very different picture. To provide the same purchasing power as £600 in 1947–48, an income would have to rise from £536 in 1945–46 to £917 in 1956–57. On this constant real income, the proportion paid in tax has fallen, not from 20 per cent. almost to zero, but from rather over 15 per cent. to just under 7 per cent. or by about 55 per cent. On higher real incomes the reduction in the tax burden becomes progressively smaller. On the equivalent of £1,000 a year in 1947–48, the proportion paid in tax has fallen from rather over 25 per cent. to somewhat less than 17 per cent., or by 35 per cent. On the equivalent of £2,000 a year, it has fallen from 37½ to 31½ per cent., or by 16 per cent. On the equivalent of £5,000 a year, the proportion paid in tax has remained unchanged at 53 per cent., while on larger incomes it has actually risen. At the £10,000 (1947–48) level, for instance, the payment in 1945–46 was 66 per cent. on £8,950, while in 1956–57 it is 68½ per cent. on £15,288.

Other classes of taxpayers have fared even less well. For instance, on the £600-equivalent level, if the same taxpayer had an income derived wholly from investments he would have paid 22 per cent. in 1945–46 and 16 per cent. on the same real income in 1956–57; while if his income had been wholly earned but he himself had been single he would have paid 32 per cent. in 1945–46 and 20 per cent. in 1956–57. The falls in average tax rates would thus have been only 27 per cent. and 38 per cent. respectively, as compared with 55 per cent. in the case shown in Table II. Similarly, at the other end of the scale, a married man with two children and a wholly investment income equivalent to £10,000 a year in 1947–48 would have paid 66½ per cent. in 1945–46 and 71 per cent. in 1956–57, while the single man with an income of similar size but wholly earned would also have paid 66½ per cent. in 1945–46, rising to 70½ per cent. in 1956–57. Thus the increases in both cases would have been about 7 per cent., as compared with an increase of 4 per cent. for the married man with two children and a wholly earned income.

In all cases, however, average rates of tax on real incomes below £2,000 a year in 1947–48 have been appreciably reduced since 1945–46, while above the equivalent of £5,000 a year they have risen. It is also noticeable that today, after five years of

TABLE I

Percentage of Money Incomes Paid in Income Tax and Surtax
(Married Couple with Two Children)

	£600	£1,000	£1,500	£2,000	£5,000	£10,000
1913–14	3·0	3·7	3·7	3·7	5·8	5·8
1938–39	3·7	10·2	13·5	16·3	28·3	38·6
1945–46	20·2	30·1	35·1	38·8	55·2	67·8
1946–47	14·0	24·1	30·3	34·0	50·8	64·7
1947–48	10·6	21·4	26·7	31·3	49·7	64·1
1948–49	7·7	18·0	24·0	27·0	48·0	63·3
1949–50	7·7	18·0	24·0	27·0	48·0	63·3
1950–51	6·5	16·9	23·2	26·4	47·8	63·2
1951–52	5·8	16·3	23·8	27·3	49·7	65·3
1952–53	2·2	11·2	19·7	24·0	48·3	64·7
1953–54	1·8	10·2	18·4	22·6	46·2	62·4
1954–55	1·8	10·2	18·4	22·6	46·2	62·4
1955–56	0·5	8·5	16·6	20·7	43·9	60·0
1956–57	0·5	8·5	16·6	20·7	43·9	60·0

Conservative governments, the proportions paid on real incomes equivalent to £2,000 a year and over in 1947–48 are higher than during the years between 1947 and 1951, when a Labour government was in office. The exclusion of the higher real incomes from most or all of the benefits of reduced direct

TABLE II

Percentage of Real Incomes Paid in Income Tax and Surtax
(Married Couple with Two Children)

	Money Income 1947/48 £600		Money Income 1947/48 £1,000		Money Income 1947/48 £1,500	
	Equivalent Income	% Tax	Equivalent Income	% Tax	Equivalent Income	% Tax
	£		£		£	
1913–14	235	*0·8*	392	*2·0*	588	*2·8*
1938–39	368	—	613	*1·5*	920	*10·0*
1945–46	536	*15·4*	895	*25·4*	1,340	*30·3*
1946–47	564	*11·6*	940	*23·2*	1,410	*28·9*
1947–48	600	*10·6*	1,000	*21·4*	1,500	*26·7*
1948–49	648	*8·4*	1,080	*19·2*	1,620	*24·5*
1949–50	666	*9·4*	1,110	*19·7*	1,665	*24·8*
1950–51	690	*8·4*	1,150	*19·3*	1,725	*24·6*
1951–52	750	*9·7*	1,250	*21·1*	1,875	*26·5*
1952–53	828	*7·4*	1,380	*17·8*	2,070	*25·1*
1953–54	840	*6·3*	1,400	*16·7*	2,100	*24·0*
1954–55	864	*7·3*	1,440	*17·2*	2,160	*24·5*
1955–56	882	*6·2*	1,470	*16·2*	2,205	*23·5*
1956–57	917	*6·9*	1,529	*16·7*	2,293	*24·0*

	Money Income 1947/48 £2,000		Money Income 1947/48 £5,000		Money Income 1947/48 £10,000	
	Equivalent Income	% Tax	Equivalent Income	% Tax	Equivalent Income	% Tax
	£		£		£	
1913–14	784	*3·7*	1,960	*3·7*	3,920	*5·8*
1938–39	1,225	*13·0*	3,065	*24·0*	6,130	*33·5*
1945–46	1,790	*37·5*	4,470	*53·3*	8,950	*65·9*
1946–47	1,880	*33·3*	4,700	*49·8*	9,400	*63·5*
1947–48	2,000	*31·3*	5,000	*49·7*	10,000	*64·1*
1948–49	2,160	*29·1*	5,400	*49·8*	10,800	*65·0*
1949–50	2,220	*29·4*	5,550	*50·1*	11,100	*65·3*
1950–51	2,300	*29·7*	5,750	*50·8*	11,500	*66·0*
1951–52	2,500	*33·4*	6,250	*55·5*	12,500	*70·5*
1952–53	2,760	*33·3*	6,900	*56·2*	13,800	*72·2*
1953–54	2,800	*32·0*	7,000	*54·4*	14,000	*70·0*
1954–55	2,880	*32·5*	7,200	*54·8*	14,400	*70·3*
1955–56	2,940	*31·0*	7,350	*53·0*	14,700	*68·3*
1956–57	3,058	*31·5*	7,644	*53·4*	15,288	*68·6*

taxation since the war may well give rise to difficulty if any future government should find it necessary again to increase it. The choice would have to be made between exempting the higher real incomes from the increase, which might be politically difficult, and raising the proportions of such incomes taken in taxation above the level which was regarded as possible even in time of war.

In a year in which prices rise, it is necessary only to leave tax rates unchanged in order to increase the proportions paid over in tax of unchanged real incomes at all levels. This is clearly shown in Table II in the results for the years 1949–50, 1954–55 and 1956–57, when rates of tax remained unchanged while the proportions paid increased. Thus highly progressive rates of tax have tended to provide a partial check to inflation by raising, without the necessity for any increase in tax rates, the proportion going to the government of a constant real national income. When the real national income is rising as well as prices, the effect is, of course, all the greater.

The extent to which the effect of rising prices increases the tax burden on constant real incomes can be seen even more clearly if we contrast the percentages of various levels of real income which would have been paid in tax today if tax rates and allowances had remained as they were in 1947–48 with those which were actually paid then and those which are actually paid now. If rates and allowances were the same today

TABLE III

Rising Prices and the Potential Rise in Tax
(Married Couple with Two Children)

1947–48		1956–57				
			Tax at 1947–48 Rates		*Tax at 1956–57 Rates*	
Income £	Tax as % of Income	Equivalent Income £	Tax as % of Income	Change since 1947–48 as % of Income	Tax as % of Income	Change since 1947–48 as % of Income
600	10·6	917	19·9	*+9·3*	6·9	*—3·7*
1,000	21·4	1,529	27·0	*+5·6*	16·7	*—4·7*
1,500	26·7	2,293	34·3	*+7·6*	24·0	*—2·7*
2,000	31·3	3,058	40·1	*+8·8*	31·5	*+0·2*
5,000	49·7	7,644	58·7	*+9·0*	53·4	*+3·7*
10,000	64·1	15,288	73·3	*+9·2*	68·6	*+4·5*

as they were nine years ago, a married man with two children and a wholly earned income with the same purchasing power as £600 in 1947–48 would be paying nearly 20 per cent. of his income in tax, as compared with 10.6 per cent. in 1947–48. At the £1,000 a year equivalent income the increase would be smaller—from 21.4 to 27 per cent., or 5.6 per cent. of income, as against 9.3 per cent. for the equivalent of £600. With higher incomes the increase again becomes larger, but even at the equivalent of £10,000 a year the rise is only 9.2 per cent. of income, or barely as large proportionally as at the £600 a year level. In actual fact, of course, effective tax rates on incomes up to the equivalent of £1,000 a year have been so reduced that the proportions paid in tax have fallen substantially in spite of the rise in money incomes. Above this level there is a progressive fall in the net benefits from tax reductions, until at the equivalent of £2,000 a year they are only just sufficient to offset the money rise; thereafter the effects of the reductions in tax rates fall progressively below those of the rise in money incomes.

THE DISTRIBUTION OF INCOMES

The effect of rising prices in increasing the proportion paid in tax on constant real incomes is, however, only one of the factors affecting the proportion of an unchanged total of real personal incomes yielded by constant rates of tax. There is also another which, though on balance less important than the first, substantially modifies its effects. This is the tendency which has continued since before the war and still persists for the proportion of total personal incomes received by the higher income groups to fall, even before tax. This second factor pulls in the opposite direction, by reducing the proportion of incomes paying the higher tax rates and increasing the proportion paying lower rates.

* * *

Information on the distribution of personal incomes is much less full than on rates of tax, and estimates are given in the *National Income Blue Books* for only five years:—1938, 1949, 1953, 1954 and 1955. Of these, only unrevised estimates of distribution are available for 1953 and 1954, though the changes in the totals are small. Further, the estimates for "attributable" incomes exclude such items as interest on life insurance funds and increases in pension funds, which are included in the total of personal incomes but cannot be

allocated to particular income groups. The total naturally excludes benefits, in cash or kind, which fail to find their way into tax returns at all levels of income. How far the inclusion of these would modify the conclusions drawn from the published estimates must be a matter of opinion.

The distribution of personal incomes is not set out in the *National Income Blue Books* in a form immediately suitable for the present purpose, since incomes before and after tax are divided into income groups which vary greatly in size from year to year. However, by fitting an appropriate curve, it is possible to interpolate aggregate incomes before and after tax for groups of constant size.

The results for incomes before tax are submitted in Table IV. It is estimated that the 100,000 largest incomes in the country were those above £2,070 a year in 1938 and £3,850 a year in 1955. The table shows that the share of aggregate (attributable) personal income received by this group fell from 11.7 per cent. of the total before tax in 1938 to 7.1 per cent. in 1949, and again to only 5.3 per cent. in 1955. Similarly, the the million largest incomes were those above £450 in 1938 and £1,175 in 1955. The share of the whole of this group declined from 27.8 per cent. in 1938 to 21.5 per cent, in 1949 and 17.4 per cent. in 1955. What of the counterpart of this movement? If the share of one section has declined, that of some other section or sections must obviously have risen. In fact, the largest share of the increase seems to have accrued, not so much to those with the lowest incomes as to those in the middle range—the second five million group. This comprises the stratum with incomes between £123 and £184 in 1938 and between £510 and £680 in 1955. The proportion of total income going to this group increased from 16.8 per cent. in 1938 to 20.5 per cent. in 1949 and 22.6 per cent. in 1955.

The share of those with incomes below the first ten millions increased from 31.6 per cent. in 1938 to 32.8 per cent. in 1949 and 34.8 per cent. in 1955; but part of this rise was due to an increase in their number from probably well under 15 millions in 1938 to 15.5 millions in 1949 and 16.2 millions in 1955. The relatively small rise in the share of the lowest income groups, in spite of the exceptionally large proportional rises in the earnings of women and juveniles, is probably attributable to the fact that these groups include many pensioners and others whose incomes have not risen proportionately with the cost of living.

The shift since 1938 in personal incomes before tax away from the higher income groups towards the middle groups has probably been caused mainly by the fall in incomes derived from investments and rent. These fell from over 22 per cent. of total personal incomes in 1938 to little more than half that proportion in 1949 and 1955. The most important cause of this fall in real investment incomes has probably been the effect of inflation in reducing the real incomes derived from all forms of fixed interest investments, and even more drastically those from the ownership of rent-controlled houses. The fall in the real incomes from the ownership of rented farm property has frequently been only a little less marked, while even holders

TABLE IV

Distribution of Personal Incomes Before Tax[1]

Income Range	1938 %	1949 %	1953 %	1954 %	1955 %	1955 Range of Income Covered[2] £
(1) 1st 100,000	11·7	7·1	5·8	5·5	5·3	*3,850 and over*
(2) 2nd "	3·6	2·9	2·6	2·4	2·4	*2,700–3,850*
(3) 3rd "	2·6	2·2	1·9	1·9	1·8	*2,150–2,700*
(4) 4th "	2·0	1·8	1·5	1·6	1·5	*1,825–2,150*
(5) 5th "	1·6	1·6	1·4	1·3	1·3	*1,625–1,825*
(6) 1st 500,000	21·5	15·6	13·2	12·7	12·3	*1,625 and over*
(7) 2nd "	6·3	5·9	5·2	5·3	5·1	*1,175–1,625*
(8) 1st million	27·8	21·5	18·4	18·0	17·4	*1,175 and over*
(9) 2nd "	8·2	8·3	8·0	7·9	7·8	*910–1,175*
(10) 3rd "	6·0	6·4	6·4	6·3	6·4	*800– 910*
(11) 4th "	5·1	5·5	5·8	5·9	5·7	*730– 800*
(12) 5th "	4·5	5·0	5·4	5·4	5·3	*680– 730*
(13) 1st 5 millions	51·6	46·7	44·0	43·5	42·6	*680 and over*
(14) 2nd 5 "	16·8	20·5	21·2	21·8	22·6	*510– 680*
(15) 1st 10 millions	68·4	67·2	65·1	65·3	65·2	*510 and over*
(16) Remainder	31·6	32·8	34·9	34·7	34·8	*under 510*
Total Incomes	100·0	100·0	100·0	100·0	100·0	

[1] The table covers only attributable personal income (see text).

[2] *Range of income covered in 1938:* (1) £2,070 and over (2) 1,260–2,070 (3) 970–1,260 (4) 795–970 (5) 685–795 (6) 685 and over (7) 450–685 (8) 450 and over (9) 300–450 (10) 238–300 (11) 205–238 (12) 184–205 (13) 184 and over (14) 123–184 (15) 123 and over (16) under 123.

Range of income covered in 1949: (1) £3,200 and over (2) 2,190–3,200 (3) 1,770–2,190 (4) 1,465–1,770 (5) 1,290–1,465 (6) 1,290 and over (7) 875–1,290 (8) 875 and over (9) 635–875 (10) 532–635 (11) 468–532 (12) 418–468 (13) 418 and over (14) 290–418 (15) 290 and over (16) under 290.

of ordinary shares have on the average suffered a loss of something like 25 per cent. in their real incomes before tax since 1938, in spite of some recovery since 1949.

Contributory causes of the fall in the share of personal incomes going to the highest groups seem to have been the reduced share taken by incomes of self-employed persons, in spite of some net rise in farmers' incomes, and the slower rise per head in salaries, especially the higher salaries, than in wages. It seems likely that the higher salaries would have risen faster if taxation had been lower at the margin, since the very high rates of marginal taxation have probably induced some employers to seek alternative methods of remuneration. It therefore seems possible that lower marginal rates of tax on high salaries might actually have provided a larger tax yield than the present high rates.

CHANGES IN REAL INCOMES BEFORE TAX

The magnitude of the changes in the distribution of incomes before tax becomes even more apparent if we convert money incomes into *real* incomes measured at 1949 prices, using for the purpose (as in Table II) the *National Income Blue Book* index of market prices for consumers' expenditure. The results of these calculations are presented in Table V. They show that, in real terms, the aggregate purchasing power of the 100,000 highest incomes fell *before tax* by nearly 40 per cent. between 1938 and 1949 and by a further 13 per cent. between 1949 and 1953, subsequently recovering very slightly (to 88 per cent. of the 1949 level) in 1955. The remainder of the first million suffered a loss of real income of 11 per cent. between 1938 and 1949 and of a further 6 per cent. between 1949 and 1953, but have since recovered nearly to the 1949 level.

On lower real incomes, the gains become progressively larger, both between 1938 and 1949 and between 1949 and 1955, until they reach a maximum with the second five millions. This is the group receiving between £123 and £184 in 1938 and between £510 and £680 in 1955. For this section, the increase in real income is 29 per cent. since 1949 and 59 per cent. since 1938. Those with incomes below this level probably show little or no rise in average real income per head between 1938 and 1949, and a rise of rather under 20 per cent. thereafter.

EFFECTS OF INCOME REDISTRIBUTION ON TAX YIELDS

This very remarkable redistribution of personal incomes before tax accounts for an apparent anomaly in the figures for the yield of personal income tax and surtax, which are set out in Table VI overleaf. As was shown in Table II, tax rates on constant levels of real income have doubled, or more than doubled, since 1938. Nevertheless, the proportion of total (attributable) personal income paid in tax has risen only from 7 per cent. to just over 10 per cent., or by 44 per cent. In addition, we must take account of the rise in the total of such incomes, amounting to 18 per cent. The combined effect of these two factors is that the real yield of tax on personal incomes has risen by 70 per cent., from £614 millions to £1,042 millions measured at 1949 prices—still very far short of the increase in tax rates.

If, with the same increase in aggregate real personal incomes, the distribution of that income had remained the

TABLE V

Changes in Real Incomes Before Tax, adjusted for Changes in Prices, 1949 = 100

Income Range	1938	1949	1953	1954	1955
1st 100,000	164	100	87	87	88
2nd ,,	123	100	94	94	100
3rd ,,	115	100	91	94	93
4th ,,	111	100	94	97	100
5th ,,	104	100	94	97	97
1st 500,000	137	100	90	91	93
2nd ,,	105	100	95	99	101
1st million	128	100	92	94	95
2nd ,,	98	100	103	106	110
3rd ,,	93	100	106	110	116
4th ,,	90	100	112	119	121
5th ,,	88	100	114	120	124
1st 5 millions	109	100	101	104	107
2nd 5 ,,	81	100	110	119	129
1st 10 millions	101	100	103	108	114
Remainder	95	100	113	118	124
Total Incomes*	99	100	107	111	117

* This table refers only to attributable incomes; the corresponding figures for non-attributable income are 82, 100, 102, 113, 119.

TABLE VI

Tax on Personal Incomes

(a) Percentage of Incomes paid in Tax

Income Range	1938 %	1949 %	1953 %	1954 %	1955 %
1st 100,000	38·2	57·6	57·2	57·5	55·8
2nd "	19·7	35·6	35·2	36·0	35·4
3rd "	16·0	31·4	27·6	28·6	27·7
4th "	15·1	29·2	24·6	25·9	22·6
5th "	12·5	27·5	22·7	24·3	20·6
1st 500,000	28·3	43·5	41·2	41·7	39·9
2nd "	8·8	22·2	16·2	17·9	16·5
1st million	24·0	37·7	34·1	34·7	33·1
2nd "	2·8	12·6	12·3	12·4	12·1
3rd "	1·5	10·6	9·6	9·1	9·5
4th "	0·4	8·7	8·2	7·3	6·7
5th "	0·4	7·5	6·5	6·0	6·3
1st 5 millions	13·5	22·8	19·8	19·7	18·8
2nd 5 "	—	6·0	3·3	4·5	5·0
1st 10 millions	10·3	17·7	14·5	14·6	14·0
Remainder	—	0·7	2·2	2·6	2·7
Total tax paid	7·0	12·1	10·3	10·4	10·1

(b) Percentage of Total Tax contributed by Income Groups

Income Range	1938 %	1949 %	1953 %	1954 %	1955 %
1st 100,000	63·8	33·7	32·4	30·1	29·5
2nd "	10·1	8·5	8·8	8·3	8·6
3rd "	5·9	5·8	5·2	5·1	4·8
4th "	4·2	4·3	3·7	3·9	3·4
5th "	2·9	3·5	3·1	3·2	2·7
1st 500,000	87·0	55·9	53·2	50·6	49·0
2nd "	7·8	10·8	8·4	8·9	8·2
1st million	94·8	66·7	61·6	59·5	57·2
2nd "	3·3	8·7	9·8	9·2	9·4
3rd "	1·3	5·6	6·0	5·6	6·0
4th "	0·3	4·0	4·8	4·1	3·7
5th "	0·3	3·1	3·5	3·2	3·5
1st 5 millions	100·0	88·1	85·7	81·6	79·8
2nd "	—	10·0	6·9	9·2	11·0
1st 10 millions	100·0	98·1	92·6	90·8	90·8
Remainder	—	1·9	7·4	9·2	9·2
	100·0	100·0	100·0	100·0	100·0

same in 1955 as in 1938, the rise in the real yield of income tax and surtax on personal incomes would have been not 70 per cent. but something like 160 per cent. The yield would have been approximately £1,600 millions at 1949 prices and over £2,000 millions at 1955 prices. This compares with the actual yield of £1,042 millions at 1949 prices and £1,340 millions at 1955 prices.

The greater part of the difference is accounted for by the loss of taxable capacity in the first 100,000 incomes. These, in spite of a doubling of tax rates, actually paid only £307 millions in tax in 1955, as compared with £392 millions in 1938, the tax being measured in both cases at 1949 prices. Had their share of income before tax remained as in 1938, they would have paid something like £800 millions at 1949 prices, or over £1,000 millions at 1955 prices, compared with the actual payment in that year of £390 millions. It therefore seems that the very high rates of tax which have been in force since the war cannot be attributed entirely to increased government expenditure. It is not unreasonable to say that they have been occasioned also by the loss of taxable capacity in the higher incomes, a loss which, with highly progressive rates of tax, is offset only to a small extent by the rise in the lower incomes. If income distribution before tax were today the same as it was in 1938, the present total yield from taxes on personal incomes could be obtained with tax rates about one-third lower all round.

CHANGES SINCE 1949

The effects on tax yields of the changes in income distribution since 1949, while much smaller than those since 1938, have been similar in tendency. With the same total personal income and tax rates as in 1955, but with a 1949 distribution of incomes before tax, the yield of personal income tax and surtax would have been some £200 millions higher than in fact it was, of which some £150 millions would have come from the highest 100,000 incomes. The trend was still continuing in 1955. In 1949 the 100,000 highest incomes, with 7.1 per cent. of total income before tax, contributed 33.7 per cent. of total tax collected. In 1953, with 5.8 per cent. of total income, they contributed 32.4 per cent. In 1954, the share of total income going to this group further declined to 5.5 per cent. and their share of total tax collected to 30.1 per cent., while in the following year their share of income dropped to 5.3 per

cent. and their contribution to the total tax collected to 29.5 per cent.

For the first million incomes the movement was similar:

First Million Incomes

	Share of total income	Share of total tax collected
	%	%
1949	21.5	66.7
1953	18.4	61.6
1954	18.0	59.5
1955	17.4	57.2

REAL INCOMES AFTER TAX

Even if the distribution of income before tax had remained unchanged, the great rise in rates of tax since 1938 would, of course, have caused a very large fall in the real value after tax of the highest incomes. In spite of a postulated rise of 20 per cent. *before* tax, the aggregate real incomes *after* tax of the first 100,000 would have fallen by 40 per cent. or more. In actual fact, however, the effects of taxation on the highest incomes, as shown in Table VII, have been overshadowed by the fall in the total of those incomes *before* tax.

For the first 100,000, the higher rates of tax merely converted a fall in real incomes of 46 per cent. before tax into one of 62 per cent. after tax. It is on the ranges of incomes between £910 and £3,850 that the higher tax rates have had their relatively greatest effect. The rise in taxation increased the loss of the remainder of the first half million (those with gross incomes in 1955 between £1,625 and £3,850) from 15 per cent. before tax to 26 per cent. after tax; the loss of the second half million (those with incomes between £1,175 and £1,625) was increased by higher taxation from 4 to 12 per cent.; and for the second million (drawing incomes in 1955 between £910 and £1,175) a potential gain of 12 per cent. before tax was almost entirely eliminated by taxation. At lower levels, the effects of tax increases again become relatively unimportant. For the largest gainers before tax, the second five millions, the higher tax rates have merely reduced a gain of 59 per cent. before tax to one of 52 per cent. after tax, while for the

TABLE VII

Changes in Retained Incomes, adjusted for Change in Prices, 1949 = 100

(a) Changes in Income Groups

Income Range	1938	1949	1953	1954	1955
1st 100,000	239	100	88	87	92
2nd ,,	153	100	95	94	100
3rd ,,	141	100	96	98	99
4th ,,	133	100	100	102	110
5th ,,	126	100	100	101	106
1st 500,000	174	100	94	94	99
2nd ,,	123	100	102	105	109
1st million	157	100	97	98	102
2nd ,,	109	100	104	106	110
3rd ,,	102	100	107	112	118
4th ,,	98	100	113	120	124
5th ,,	95	100	115	122	126
1st 5 millions	122	100	104	108	112
2nd 5 ,,	86	100	113	121	130
1st 10 millions	110	100	107	112	119
Remainder	96	100	112	115	122
Total Incomes	105	100	109	114	120

(b) Percentage of Total in Income Groups

Income Range	1938 %	1949 %	1953 %	1954 %	1955 %
1st 100,000	7·8	3·4	2·8	2·6	2·6
2nd ,,	3·1	2·1	1·8	1·8	1·8
3rd ,,	2·3	1·7	1·5	1·5	1·4
4th ,,	1·8	1·4	1·3	1·3	1·3
5th ,,	1·6	1·3	1·2	1·1	1·1
1st 500,000	16·6	10·0	8·6	8·3	8·2
2nd ,,	6·1	5·2	4·9	4·8	4·7
1st million	22·7	15·2	13·5	13·1	12·9
2nd ,,	8·6	8·2	7·8	7·7	7·6
3rd ,,	6·4	6·5	6·4	6·4	6·4
4th ,,	5·4	5·8	6·0	6·1	6·0
5th ,,	4·8	5·3	5·6	5·7	5·6
1st 5 millions	47·9	41·0	39·3	39·0	38·5
2nd 5 ,,	18·1	21·9	22·7	23·3	23·9
1st 10 millions	66·0	62·9	62·0	62·3	62·4
Remainder	34·0	37·1	38·0	37·7	37·6
	100·0	100·0	100·0	100·0	100·0

remainder a gain of about 19 per cent. per head is reduced to one of 16 per cent.

*   *   *

How far the two conflicting tendencies, of inflation to raise tax yields and of income redistribution to lower them, will continue to operate in the future depends largely on how successful are the present attempts to check the rise in prices. If prices can be stabilized, or the rapidity of their rise greatly reduced, Chancellors will no longer be able to rely on rising money incomes to provide them with increasing proportions of constant real incomes. Hence they will no longer be able to make inexpensive bids for popularity by reductions in tax *rates* which do not in fact do more than prevent the real burden of taxation from rising. On the other hand, since the fall in the share of the higher income groups has been due largely to rising prices, their stabilization would also be likely to slow down the process of income redistribution or even bring it to an end. It seems likely, however, that the process of redistribution would tend to slow down even if prices continued to rise. This could be partly because maturing fixed-interest securities can now be re-invested to yield a higher income, partly perhaps as an effect of modifying or abolishing rent-restriction. Most of all it could be because investors and others, as they come increasingly to anticipate continuously rising prices, will increasingly seek out means for ensuring that their money incomes rise at least part of the way with them.

F. W. Paish.

The London School of Economics.
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The American Boom in Canada

By T. W. Kent

CANADA is booming. This is a new economic fact, a fact of the past twelve months or so, and as such rarely appreciated yet either in Canada or outside. Surely there is nothing new, many people will say, in the Canadian boom? It is true, certainly, that Canada has been enjoying sustained prosperity, and making remarkable economic growth, ever since the early years of the last war. But it is only since the tiny recession of 1954 was followed by an amazingly sharp recovery that a real boom psychology has taken hold.

Canadians have been shy, and properly so, about using the word "boom". Every year from 1948 on, Canada has devoted to investment more than a fifth of its gross national product. But in the attitudes of Canadian business, of government and people, there has been nothing of that speculative frenzy which comes sooner or later to an abrupt and dismal end. When the 1954 recession proved barely a recession at all, those who had expected something worse were surprised and half-disappointed. But they re-packed their mental bags in a hurry. It was as far back as the nineteen hundreds that Sir Wilfrid Laurier, then Prime Minister, said that the twentieth century belongs to Canada. Now the man at the corner drug-store is beginning to believe it.

INVESTMENT SOARING

The primary figures to illustrate what has happened are those of investment. In the year of comparative recession, 1954, total public and private investment in Canada was $5.6 billions (23 per cent. of the gross national product). In 1955 it rose to $6.2 billions (23 per cent. of 1955's increased g.n.p.). The Canadian government's survey of investment intentions, private and public, revealed for 1956 a staggering total of $8 billions of intended investment—a dramatic 28 per cent. of the annual rate at which g.n.p. was running in the early months of

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the year. This was clearly beyond the physical capacity of the economy, despite a sustained rise in productivity and fast-growing labour force, and even despite a sharp rise in Canada's import deficit.

Actual realized investment in 1956 will probably prove to be about $7.5 billions, and has been accompanied by an appreciable price rise in the investment section (probably about 5 per cent). In physical terms, therefore, the short-fall of investment below the intentions is probably about 10 per cent. But neither enforced delays nor higher construction costs nor higher interest rates have deterred most of the intending investors, whether private concerns or public bodies. Although no official figures are available at the time of writing, the preliminary indications are that investment intentions for 1957 exceed, and may appreciably exceed, the $8 billions that was planned for 1956.

There are many other overt signs of the new boom psychology. Four years of remarkable price stability, during which increases in wage rates were generally absorbed through increased productivity, came to an end last summer. Cost increases are now being passed on to the consumer over a wide range of products. The consumer price index has risen by 3 per cent. in five months, and further cost increases are at present in process of working themselves through to the final product. Inflationary pressures are equally clearly reflected in the employment situation.

TABLE I

Canada's Growth

	Gross National Product (money value)	Index of Gross National Product (in real terms) 1949=100	Investment	Investment as % of Gross National Product
	$'000 m.		$'000 m.	
1950	18·20	106·3	3·82	*21·0*
1951	21·47	112·5	4·58	*21·3*
1952	23·26	120·1	5·29	*22·7*
1953	24·47	124·7	5·84	*23·9*
1954	24·32	121·7	5·62	*23·1*
1955	26·77	132·3	6·23	*23·3*
1956	29·7	141·0	7·5	*25·0*

It must be stressed that Canadian labour statistics cannot be directly compared with those of the United Kingdom. Many more occupations in Canada are seasonal; there is an appreciable minority of workers making high earnings for part of the year who do not choose to take regular jobs in the other season. Canada thus has much more movement of workers in and out of the active labour force. People also change jobs more readily. But, because of the great distances involved, local pockets of under-employment can survive for some time despite labour shortages in other areas. For such reasons as these, any given level of effective demand, in relation to available resources, may be compatible with a higher percentage of unemployment than would be the case in the more homogeneous economy of the United Kingdom. It is therefore the more significant that during the summer months of 1956 the percentage of the labour force out of jobs fell to as little as 1.7 per cent.

The sharpest of all the indications of inflationary pressure is, however, the size of Canada's import deficit. The balance of payments figures for 1953, 1954 and 1955 showed deficits on current account of $443 millions, $431 millions, and $692 millions respectively. During 1956 the deficit has certainly exceeded $1 billion, and may have been considerably higher.

These symptoms of inflation have not appeared in an economy that is in any way careless of its finances. On the contrary, the Bank of Canada has pursued—over vigorous political and business protests—a tight money policy since the summer of 1955. And the government is operating with a considerable budgetary surplus. The boom has taken hold despite orthodox government measures to prevent inflation.

WILL IT GO ON?

The obvious question posed by such a boom is, nevertheless, how long will it last? Perhaps, indeed, the question should be more dramatic. Canada's boom is based in considerable part on primary production. And the experience of primary producers always has been that periods of expansion and prosperity are followed by slumps, often severe. How soon will Canada slump? That should, in all the logic of past experience, be a serious question. The measure of Canadian confidence is that nowadays hardly anyone entertains it as a serious question.

This, no doubt, is boom psychology. Yet it cannot be

dismissed as an unthinking optimism, a foolish indifference to experience. Canadians have not come easily to their confidence. They have come to it at all, in fact, only at second hand, by the force of example. The real instigators of Canada's boom psychology are the American companies and investors who since the war have been demonstrating their faith in Canada's economic expansion in the most practical way, by pouring their capital—including great quantities of risk capital—across the border.

A more common attitude among Canadians is this: they are caught in the boom psychology to the extent of being determined to get projects done despite high interest rates, delays and rising costs; but often their chief motive is the conviction that they must have new equipment and new buildings to keep pace with the expansion that has already happened. They are saving themselves from being left behind. This is, of course, particularly true in the public sector—road building, hospitals and so on—but it also applies to the motives for much business investment. It is, also, one of the reasons for believing in the solidity of the boom. If there are any speculative excesses in Canada today, if any substantial volume of investment is being misdirected, the chances are that the capital concerned is mostly American rather than Canadian.

This is not to say that there is no nervousness at all. There is some. But it is directly attributable to the increasingly tight money policy of the Bank of Canada. What the authorities think necessary to prevent the boom getting out of hand is regarded by some businessmen as inviting a recession. That creates enough uncertainty to make one pause in writing an article like this, which will be read some weeks later. Nevertheless it must be firmly said, as a sober report on the state of Canada in 1956, that the conviction of continuing prosperity runs strong. Hardly anyone has been taking it as a basis of reckoning that the boom will be broken, by anything more than a slight and temporary recession, in the foreseeable future.

The fear that is more common—or, to be precise, less rare—among thoughtful Canadians is exactly the opposite. It is a fear that the boom is going too fast. They do not mean, primarily at least, too fast in an economic sense; they are not thinking of a bubble that may be inflated to bursting point. The fear is that the Canadian economy is growing so fast as to endanger not the economic expansion but the political

stability of Canada. Few people, of course, put the question in this blunt, and therefore dramatic, way. It is generally implicit, rather than recognized and admitted in explicit terms. But the issue is not on that account any less real.

THE HISTORICAL BACKGROUND

It cannot be understood without looking back at Canadian history. The outside world's interest in Canada is, very naturally, a recent growth. Until the last war, Canada was described with very little exaggeration as "the unknown country". The Canada that has attracted so much post-war attention is the Canada of extraordinarily rapid economic growth. Few outsiders, therefore, appreciate the fundamental paradox about that growth. The paradox is that the country which is now booming was built in defiance of economics. The contemporary observer sees in Canada an economic system functioning with quite extraordinary success. He sees a development that is perhaps as impressive as any achievement of industrial civilization. If he looks closely at Canadian economic policy, he may say with admiration that here the fundamental good sense of classical, liberal economics has been maintained, has been made to fit the politics of contemporary mass democracy, with quite unusual success. Such observations contain an important element of truth. And yet Canada is in some respects the unlikeliest place in the world for them to be true. The Canadian economy that now looks so wonderful, in straight material terms, is in fact an economic artifice, established for the sake of a political ideal.

The American revolution against Britain produced two nations, not one. It produced the United States and it produced also, in what is now eastern and central Canada, a people determined—the conquered French perhaps even more determined than those of British stock—not to be part of the United States. Throughout the nineteenth century, it was the Canadians who were far more set on remaining non-American than the mother country was on keeping them so. Indeed, British governments often behaved as if they would have been glad to have the embarrassment of a British North America off their hands, if only the stubborn colonists would sensibly throw in their lot with the United States. But they would not. The modern Dominion of Canada—a *mari usque ad mare*—was created in 1867 when the American frontier was being pushed westwards to the Pacific. The Canadians were deter-

mined not to be outflanked by their neighbours to the south. They built the Canadian Pacific railway across the thousand miles of wilderness that separated the western end of settlement in Ontario from the eastern beginning of the prairies, in order to provide an unnatural alternative to the natural lines of commerce that ran largely north and south across the 49th parallel, across the straight line that was drawn as a boundary because there was nothing natural to serve the purpose.

Economics, once having been defied, was nevertheless for two generations kind to the schemes of the politicians. The prairie sod was broken to grow wheat, and for wheat there was no market in the United States; the natural direction of movement—for wheat almost alone in the Canadian economy, but it was enough—was eastwards to the consumers of Europe, not southwards. Thanks to that, the artificial economy worked. It was slow and poor, indeed, compared with what was happening to the south. It was horribly dependent on one crop, on one export. But still, it worked. As long as the United States was still in the stage of self-development, still pushing out the frontier within its own boundaries, the little fringe economy to its north was more competitive than complementary with it. And it could balance its international accounts satisfactorily through the famous triangular pattern of trade by which Canada earned an export surplus with Britain and Europe and used it to finance an import deficit with the United States.

It was the last war, of course, that made patent the end of this era. But the war, in this as in so much else, merely accelerated trends that existed before. Canada's first phase of rapid development, early in the century, had been keyed to serving the European market with wheat. The short-lived second phase, in the later 'twenties, was already different. It was associated primarily with the development of the forest industries, and here the market pull, especially for newsprint, came in substantial measure from the United States. The north-south lines were beginning to assert themselves. In Canada's post-war development, they have swept almost everything else aside. In 1938, 40 per cent. of Canada's exports went to Britain and 33 per cent. to the United States. In 1955, 18 per cent. went to Britain and 60 per cent. to the United States.

This enormous change is compounded from two causes. One is the familiar dollar shortage, sucking the substance out of Britain and Europe as customers for Canada. The other is the discovery of Canada by the United States; the discovery that, since the passing of the last American frontier, a mature U.S. economy and an under-developed Canadian economy are complementary to each other. The charter of the Canadian boom is the Paley report, which in 1950 forecast the prospective requirements of the United States for industrial materials during the next 25 years. The materials for which it forecast greatly increasing American needs were almost a catalogue of Canada's under-developed resources—aluminium (for which Canada has the necessary cheap power), nickel, iron, petroleum, copper, lead, zinc, titanium, wood-pulp, and so on.

Canada would, it is true, have been prosperous in the post-war world even if it were not endowed with materials which fit so well the expanding needs of the United States. Populated Canada is too much a stretched-out fringe to the United States not to have benefited enormously, in any event, from American prosperity. The Canadian boom is really two booms in one: the opening-up of new sources of primary wealth, especially minerals; and the growth of secondary, manufacturing industry. The first is responsible for the dramatic ventures that have pushed Canada's economic frontier into the barren northland and caught the imagination of men everywhere. The growth of manufacturing industry, though less spectacular, has absorbed in total considerably more capital and accounts for most of the post-war expansion in employment.

Nevertheless, it is the prospective development of Canada's primary resources over the years to come that is the basic factor. It is this which creates so much confidence in the future, and therefore itself helps to make investment in the secondary industries seem so attractive. The two together provide as stimulating a field for investment, as high a marginal efficiency of capital, as has ever beckoned invitingly to a mature, high-saving economy. The mature economy with the capital to invest is, of course, the economy next door: it is the United States. Hence the great flow of American equity capital into the development both of Canada's primary resources and of manufacturing industries. It is inevitable that the north-south lines of the economy,

running across the border, are much stronger already than ever before, and are growing stronger every day. And it is equally inevitable that in Canada, originally built as a nation in defiance of those lines, there should be serious heart-searchings about the whole process, a solemn questioning whether development at a slower pace, and with a greater admixture of local capital, might not be preferable.

In the early post-war years—indeed, until very recently—the emphasis of the questioning was different. It was on trade more than on investment. The fear was that by exporting more to the United States, and relatively less to Britain, Canada was becoming dangerously and unnecessarily dependent on American prosperity. "Putting all the eggs in one basket" was an invitation to instability. Nowhere more than in Canada were people haunted, in the early post-war years, by dark fears of the "inevitable" American slump.

Such fears have lessened for two reasons. First, the American slump has not happened. Secondly, the United Kingdom has failed to restore the convertibility of sterling or otherwise open its market a little more to Canadian goods. In these circumstances, Canada has come increasingly to realize that in the post-war world the sterling countries are the most sensitive reactors to an American recession. If that came, Canadian exports to sterling markets would be likely to suffer at least as much and at least as quickly as Canada's direct exports to the United States.

The level of American prosperity is the determinant anyway. There is, indeed, a reasonable conviction that the Canadian economy as it now is, with the United States taking, in some years, two-thirds of its exports, is nevertheless likely to resist contagion from a minor American recession at least as well as any other trading country. There are still undertones of concern about the concentration of Canadian exports on the United States and the "neglect" of sterling markets, but in relation to economic thinking in Canada these are little more than echoes from the past. The live issue of the day is the boom problem: it is the question of how Canada should react to the amount of capital coming from the United States and the consequent speed of utilization of Canada's resources.

THE INFLOW OF AMERICAN CAPITAL

In political discussions this issue is often mingled with some rather crude ideas about the inferiority of primary industries to manufacturing, and about the dangers of exhausting "irreplaceable" resources such as minerals. The intention of this article, however, is to isolate the valid and important question which concerns the flow of American capital to Canada. Its desirability is discussed even though it plainly is essential to the Canadian economy as now constituted. It is the substitute for the triangular pattern of trade by which Canada used to finance its external account. The substitute has worked well. So far in this decade—from 1950 to the middle of 1956—Canada has incurred a cumulative current account deficit on international transactions of $2.7 billions. Against this, the direct investments of foreign companies in their Canadian activities have totalled $2.3 billions. Other Canadian borrowing from the United States has roughly balanced repayments of capital and Canada's capital exports to other countries.

Investment of this kind holds no economic terrors for the future. In large measure, it creates the means to service the obligations incurred. There is no need to fear, in this sense, future instability in the Canadian balance of payments. It is true that in 1956, under the pressure of the boom, the import deficit has increased greatly. Direct U.S. investment in Canada has also been buoyant, but not so much so. The rest of the deficit has been comfortably covered by other capital flows —so much so that the Canadian dollar has been appreciating against the American and has lately been again standing, as it was before the recession, at a premium of 4 per cent., which is distinctly embarrassing to Canadian exporters and to domestic manufacturers competing with imports from the United States.

Nor is the composition of imports such as to make the deficit look alarming. Table II overleaf sets out, in comparative figures for the first half of each year, the classification of imports according to principal end-uses. It will be seen that, compared with the "recession" period in the first half of 1954, total imports have jumped by nearly $800 millions. But of this, less than a quarter—$182 millions—represents extra consumer goods. Investment goods, on the other hand, account for $311 millions of extra imports, and the rest are mostly industrial materials.

The concern over American capital is not, therefore, a concern about short-run economic trends. It is a concern about long-run implications. To explain this, a few statistics may be quoted. The latest detailed ones refer to 1954. At that time, long-term foreign capital invested in Canada was $12.5 billions, of which $9.6 billions was American and $2.1 billions British. The relative importance of American capital is increasing all the time. Over the past seven years, it has accounted for more than 80 per cent. of the increase in the book value of all foreign investments in Canada. In 1954, 60 per cent. of the American capital—$5.7 billions—was the direct investment of American companies in Canadian business. Investment on this scale gave a controlling interest to American-owned companies in many sectors of the Canadian economy, and especially in some of the most dynamic. The following figures for individual industries relate to 1953: 68 per cent. of the capital employed in the petroleum industry was controlled in the United States; for mining, the proportion was 53 per cent.; for chemicals 54 per cent.; for electrical apparatus 62 per cent.

This massive foreign investment is not, it must be explained, the reflection of a low rate of saving in Canada. On the contrary, Canadian savings are high. But they have been invested very largely in residential property, public utilities, agriculture and so on. Consequently, although foreign financing over the five years 1950–54 represented only 13 per cent. of net capital formation in Canada, foreigners nevertheless provided well over half of the new investment going into the manufacturing, mining and petroleum industries. Moreover, it is notable that in these fields Americans tend to provide the equity capital, Canadians the bonds. And, lastly,

TABLE II

Classification of Canadian Imports
(First half of each year)

	1952	1953	1954	1955	1956
	$m	$m	$m	$m	$m
Consumer Goods	519	657	648	701	830
Investment Goods	619	700	638	663	949
Industrial Materials, fuels and lubricants	812	860	764	846	1,066
Total, all imports	**1,950**	**2,217**	**2,050**	**2,210**	**2,845**

it should be said that the figures quoted here certainly understate the present position, since the rush of American direct investment has been gathering extra force lately. Unofficial estimates indicate that, as against the 13 per cent. ratio for the 1950–54 period, new foreign capital in 1955 rose to one quarter of net capital formation, and in 1956 the proportion was probably higher still.

CANADA'S DIVERSITIES

It is impossible to define, briefly and exactly, the sentiments that this situation arouses in Canadians. It is necessary at this stage to emphasize another of the facts about Canada that is little appreciated outside the country. That is its extraordinary diversity. There are only sixteen million Canadians, but they are spread thinly across the breadth of a continent. This means that regional divergencies in economic interest are quite extraordinarily great. The farmers of Saskatchewan, growing predominantly one crop for export, have few common interests either with the workers in protected secondary industries in eastern Canada or with the mixed farmers of Quebec. The rather Americanized province of British Columbia, with its booming forest and other industries, is poles apart in economic psychology from the still struggling maritime provinces of the east, on which a dour Scottish character seems as firmly stamped, and as naturally so, as ever.

The regional differences of interest are only a part of the picture. They are superimposed on a people diverse in origin, in race, and therefore in culture and habits of thought. Quebec's fierce determination to preserve its own distinctive pattern of French culture and ways of life is well known; and while it makes Quebec even more suspicious of things American than is the rest of the country, the strains between the two main races have several times reached a point at which the reality of Canada as a nation, the effectiveness of national government, was all but in mortal peril. The spread of industrialization, the rise in living standards, the speeding-up of communications have in recent years done much to lessen the sense of cultural conflict, both between the two main racial groups and between each of them and the substantial minorities of Ukrainians, Germans and others. During and since the war the Canadian people have at last come within talking distance of "a common, unhyphenated nationality", as Laurier called it. A sense of nationality, a consciousness of common aims and

interests and attitudes, is at work now across the breadth of Canada, and the danger that some sharp issue will fragmentate the country is now little more than the pale ghost of what was real enough a mere twelve years ago. And yet, when all this has been said, it must also be said that the mental and emotional framework within which a French Canadian considers his country's relations with the United States is still substantially different from that of an English Canadian, and different again from that of the Ukrainian and other groups.

RELATIONS WITH THE UNITED STATES

In all these attitudes, however, it is fair to say that anti-American sentiment plays a comparatively minor part. The problems in Canadian-American relations are not those of living beside Americans, as a people. They are mainly problems in living beside the American political system. They arise from the absence of cabinet government, in the British parliamentary sense, and the dominance of Congress. That political system enables sectional interests to be far more effective, in determining national policy, than they are under a parliamentary system of the British (and Canadian) kind. The U.S. Administration, and indeed the American public as a whole, when it is aware of what is going on, generally seems willing to give quite as much consideration to the interests of Canada as to its own national interest. One could not ask for more; the Americans are, in that sense, wonderful neighbours. The trouble is that Congress often subordinates any national interest—American as much as Canadian—to strong sectional interests. And there Canada gets into the soup. It is the biggest sectional interest on the North American continent that is unrepresented by any lobby in Washington. It pulls no votes. The wonder, in the circumstances, is that Canada gets hurt no more than it does. But hurt it certainly is at times.

The tariff, and American commercial policy generally, provides many examples, of a kind too obvious to need detailing. A more interesting, and presently more important, example is the current U.S. programme for disposing of food surpluses by various forms (admitted and disguised) of gifts. These surpluses originate in a farm policy that is harmful to the United States as a whole; in effect, it requires the country to subsidize farm groups that occupy a strategic position politically. Given this policy, the gift of surpluses to overseas countries is a natural, and in some respects commendable, way of dealing

with the consequences; the U.S. taxpayer can afford the burden. But the give-aways, especially of wheat, are a serious handicap to Canada's normal trade. The net effect is that a sectional interest in the United States does real damage to Canada; and although the American Administration is fairly sympathetic and apologetic, Congress rules and Canada gets hurt.

Would Canada be better off, then, if its various interests were represented by lobbies in Washington? Is the price of building a political system in defiance of the north-south economic pulls too high? Since Canada is plainly destined to become more and more integrated with the United States in a North American economy, would it not be simpler and better to have political integration too?

This question is asked in a purely theoretical spirit. No one in Canada is advocating anything of the kind. It is inconceivable that any large body of opinion should do so in the foreseeable future. That would require a complete revolution in Canadian attitudes. The Canadian problem arises from a consciousness that merging with the United States might have much economic logic behind it, though everyone is nevertheless determined not to admit that case. This creates a sense of conflict, and that is the root of all the concern expressed about American capital. The concern is not economic. More and more Canadian resources are developed by American capital for the American market, but in the process Canada is incomparably better off, in material terms, than it could possibly be in any other way. The question is whether the country is thereby losing its soul, making a mockery of its political independence. This, undefined and incoherent, is the question that lurks in the back of Canadian minds.

And yet it is not the direct cultural influences of the United States on Canada that are the main cause for concern. Some Canadians and most foreign observers are worried by the standardization of consumer tastes, the great influence on Canada of American advertising, American radio and television, American magazines, American sport, American standards of all kinds. But this concern generally reflects an expectation that Canada should be "British", should be unlike the Americans, to an extent that is quite unrealistic. Canadians are North Americans. If a loss of independence should nevertheless come, it would not be because these cultural influences are going to undermine the Canadian people's will to be themselves; it would be because the economic and

political problems of having two governments, for an area so inter-related in economics and defence and relations with the outside world, could become too complicated to solve.

TIGHT MONEY POLICY

The problem can be illustrated in practical terms from the contemporary experience of the boom itself. The Bank of Canada, to its great credit, saw sooner than anyone else the implication of the rapid recovery from the recession of 1954. In the summer of 1955 it sensed the boom psychology and set itself to deal with the impending inflationary danger. A tight money policy has been pursued ever since. It has achieved all it could in the circumstances, but it certainly has not kept inflation entirely at bay. And the chief obstacle is American capital. Tight money for Canadians has in no way deterred the flow of American investment into the country. On the contrary, the capital inflow has been further encouraged by the higher interest rates associated with a tight money situation. Moreover, the upward pressure on the foreign exchange rate, resulting from the capital inflow, has made life more difficult for Canadian industries. We thus have a situation in which the orthodox wise economic policy for Canada amounts to the discouragement of Canadian investors and Canadian industries, in order—in effect—to leave room for American capital to come in and do its job without a disastrous degree of inflation. To see this happening is as galling to Canadian companies held back by the difficulty of raising capital as it is to the Ottawa officials who find themselves with no alternative to a policy that does in this respect the opposite of what they want.

Does this suggest how the American boom in Canada carries within itself, as so many historical processes do, the seed of its own destruction? The possibility is worth consideration, at least. The boom has greatly fostered what the war had brought to the surface—the growth of a national spirit in Canada. It has made Canadians rather proud of themselves, more conscious of themselves as a nation different from other nations. Yet meanwhile Canada is becoming more dependent on the United States. It finds itself more than ever tied to the American market and infiltrated by American capital (and is also, of course, increasingly interdependent with the United States in foreign policy and defence). It will not be surprising, therefore, if the increased national feeling and the economic expansion of Canada begin to interact with each other, despite

the roots they have in common, in ways that could be explosive. Canadian national sentiment is moving strongly in one direction; Canadian development—under the inexorable pressure of an increasing "continentalization", as it is called, in consumption and investment, in foreign policy and defence—is moving in precisely the opposite direction.

To diagnose the Canadian problem in these terms is in no way to suggest that the right thing to do about it is to cut out the problem; that is, to limit the import of capital from the United States and the export of Canadian raw materials to the United States. Some people—some politicians, businessmen and economists—do talk in such terms. But the politicians, at least, take care to suggest that in the process they would speed up, not slow down, Canadian development. This is plain nonsense. And while there are theorists and businessmen prepared to say honestly that what they want, what they think best for the country, is to slow down development, that is not a programme with much practical political appeal.

A NATIONAL POLICY

The diagnosis can better lead to an entirely opposite way of tackling the problem, in constructive rather than restrictive terms. It starts by recognizing that Canada has gone too far already along her present path of economic development to think of turning back. She has grown too far already to remain a small nation and enjoy her political independence on the terms that smallness and unimportance made possible in the past. And at the same time there is no longer the strong external counter-pressure to American influence that the United Kingdom used to provide. Though the sentiment of the Commonwealth connection remains strong, the loyalty to "the Queen in Canada" deep, no one expects to see large quantities of capital from Britain or greatly expanded trade. The British connection no longer provides a modifying influence of a significance in any way comparable to the American influence.

In these circumstances Canada's problem is to move as rapidly as possible to the different sort of independent national life that, even in these days when no one is on his own in the nineteenth century fashion, a bigger, maturer nation can fruitfully enjoy. The pitfalls lie in the transition period, and the moral is to get through that as quickly as possible: it is to make a speedy job of growing. That means continuing to welcome and encourage the main aid to growth: American

capital, and the exploitation of primary resources for export to the United States. But it also means, if growth is rapid, an increasing "Canadianization" of the economy, (as opposed to "continentalization"), in the sense that expanding income and population will stimulate further development of domestic secondary industries to serve the Canadian market.

A constructive national policy would further the development of a more aggressive capital market, so that more risk-taking Canadian money would be seeking profits in competition with the flow of capital across the border. It would mean, also, encouraging a larger flow of immigrants than has hitherto been permitted by the caution of Canadian politicians—whose thinking is still coloured by fears of unemployment and by certain political and religious antagonisms to immigration (the French do not want the non-French majority against them increased; Protestants do not want more Catholics; and so on).

These are merely illustrations of the theme. Many other things besides would be involved in a constructive policy to combine rapid growth with the genuine "Canadianism" that is practicable. The point, so far as an article of this kind is concerned, is simply to show that the conflict between the American boom in Canada and the growing nationalism of Canada does not have to be resolved either by killing the boom or by submerging Canadian independence into a mere satellite status, or even in the end into absorption by the United States. There is a third way, and the record of Canadian achievements —not only in economics but in foreign affairs and in domestic social and political policies—entitles one to the fullest confidence that this way will be found.

But it will not be found easily. This is another respect in which the outside impression of Canada is often misleading. It is a successful country, rich in resources; it has enjoyed a good deal of political stability and deservedly has the reputation of being a well governed country. This record far too often causes people to think that it is an easy country to govern. It is not. Its regional and racial diversities have been mentioned above. Their sharpest expression is this: Canada has a parliamentary form of government, on the British model; and yet it has failed to establish effectively the two-party system, focusing political opinions into two fairly evenly balanced groups, that is the essential mechanism of parliamentary government. Canadian politics requires too fine a balancing of compromises in regional interests as well as

in ideas. So far only one party at a time has been able to do the balancing sufficiently well to be, for a sustained period, a national party. The Conservatives did so from Confederation to near the end of the nineteenth century. The Liberals have done so for most of this century. But the opposition has in recent years been fragmented into three weak regional groups. The Conservatives have little strength outside Ontario; both the Co-operative Commonwealth Federation party (mildly socialist in theory, agrarian in practice) and the Social Credit party (ultra-conservative under a thick veneer of immature emotionalism) have no strength outside the western provinces.

Such political fragmentation gives the Liberal government extraordinary strength in operating the machine of day-to-day administration. But it also means that it is quite extraordinarily difficult to relate the political conflict as such to the real issues that face the nation. And even the apparent strength of the government party is in some respects deceptive. Its freedom of manoeuvre is narrow. Canada is a federal State. The weakness of opposition at the federal level is compensated for, in one sense, by the ten provincial governments. To a large extent, the provincial governments, irrespective of their party labels, function as the real opposition to the federal government. But by their nature, they function on a basis of regional interests. The influence of the United States, to take the most relevant example, pulls on various regions, on diverse economic groups, in varying degrees and in greatly different ways. The rôle of the provincial governments, as the effective opposition, therefore adds to the difficulty of relating the national issues to the vagaries of politics.

This is an attempt to explain why the vagaries exist. It is not in any way a suggestion that they will predominate, an invitation to pessimism. On the contrary, I think that Canada through all its difficulties will hold to the proved good sense of its people and develop its native culture; will remain true to its political heritage and make it work; and therefore will, with no more fumbling than is inevitable in human affairs, emerge safe and enriched from the political problems of its American boom. But let no one think that in the process Canadian politics is going to be the dull history of a people for whom Nature has made everything easy. On the contrary, it will have to be an exercise in statesmanship of a high order.

Winnipeg. T. W. KENT.
November, 1956.

The Maner and Fourme how to kepe a Perfecte Reconyng

By Professor David Solomons

BERNARD Shaw made one of his characters say of book-keeping that it was the most "damnable waste of human life that ever was invented." We do not know how he would have answered the question, "Why, then, was it invented ?" After all, waste of human life is no small matter. The question, therefore, is not one to be treated lightly. Besides, if Shaw is right, a number of other people, not less distinguished in their way, have been wrong. Goethe's Wilhelm Meister called double-entry book-keeping "one of the fairest inventions of the human mind", and Sombart described it as "born of the same spirit as the systems of Galileo and Newton, . . . the first cosmos constructed on the basis of mechanistic thought". When men of such eminence differ, the difference is surely worth investigating.

Moreover, we stand on the threshold of a new era in the art of accounting, an era dominated by the electronic valve. If the past can illumine the future, is this not a good time to look back over the way we have come to check our bearings ? The recent appearance of a volume of twenty-four essays[1] on the history of accounting makes this a pleasurable as well as a profitable thing to do, for those who use accounts (and which of us does not ?) as well as for those who prepare them.

Yet whatever the debt which accountants owe to historians for their researches into the origins and development of the accounting art, it is small by comparison with the debt owed by historians to the accountants of antiquity. A substantial part of the epigraphic and documentary evidence from which our knowledge of the ancient world and the early Middle Ages has been obtained consists of accounting records. Indeed, the first written records known to us—the clay tablets left

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[1] *Studies in the History of Accounting*, ed. A. C. Littleton and B. S. Yamey (Sweet & Maxwell, 1956. xi + 392 pp. and 8 plates, 50/-).

by the Sumerians of the fourth millenium B.C.—are priestly records of temple incomes, and it has been suggested that the very art of writing was invented because of the need to keep accounts. Since that time, accounts have been kept in every conceivable form—by inscription on stone, wood, metal and on wax tablets, on potsherds, on papyrus, parchment and paper, as notches cut in tallies, as holes punched in card or paper, and as impulses on magnetic tape.

ACCOUNTING IN GREECE AND ROME

The central theme in any history of accounting must be the origin and development of double-entry. Yet double-entry did not make its appearance until after some five millenia of accounting by simpler methods. This is one of the principal conclusions reached by Mr. G. de Ste. Croix in a fascinating essay in this collection on Greek and Roman accounting.[1] It had long been thought, on the evidence of a single passage in the Elder Pliny's *Natural History*, that Greek and Roman accounts were kept in the bilateral form used in our own day—receipts on one side, payments on the other. Mr. de Ste. Croix shows with a wealth of evidence that such was not the case, and that the Greeks and Romans did not as a rule have the idea of an orderly arrangement of debits and credits, much less a complete system of double-entry. There are a few accounts, both on stone and on papyrus, in which the figures are arranged in an orderly manner in columns. But these are the exceptions. The typical account is in the form of a continuous narrative, without tabulation of the figures and without any regular segregation of receipts or payments.

From the second century A.D., Roman book-keeping, such as it was, went into decline and by the fifth century the practice of keeping private accounts (except by bankers) is said virtually to have ceased. The reason is not without its moral for us. Taxation of the property-owning classes had become penal, and accounting evidence of the ownership of intangible property (e.g. book debts) which might be made the basis of yet further tax burdens, was best avoided. Apparently the more sophisticated expedient—the keeping of two sets of books—was not resorted to in the ancient world, or at least there is no evidence of it.

The reason for the backwardness of Greek and Roman

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[1] *Op. cit.*, pp. 14-74.

accounting was, Mr. de Ste. Croix argues, the clumsy numerical notation which they used. Like us, of course, they used the decimal system "simply because all men have ten fingers and find it useful to count on them." But their system of writing numbers was greatly inferior, since they could not express the value of a number by its mere position in relation to other numbers or to zeros. This meant that in the Roman script and the Greek acrophonetic script, a long string of oft-repeated symbols was required to express what we can express with four or five; or in the Greek alphabetic script, twenty-seven different symbols were used to do what we do with ten. As place-value did not exist, to tabulate figures made it easier to check them, and in inscriptions had aesthetic value, but it was not essential for computation. This had to be done mentally or on the digital computer with which Nature has equipped us, or, when this was inadequate, on an abacus. Hence, it is argued, there was little stimulus to the orderly arrangement of figures, much less to the segregation of debits and credits.

Now this question of numerical notation may well be basic to the origins of double-entry. In Mr. de Ste. Croix's view, the introduction of double-entry is bound up with the spread of Hindu-Arabic numerals in Europe and the gradual supersession of the much clumsier Roman system from the tenth century onwards. This view has hitherto failed to find much favour because, although double-entry accounts are found from the early fourteenth century onwards, most of those which have come down to us, for the next 200 years, were kept in Roman numerals. Even where Arabic numerals were used for dates and folio numbers, Roman figures were used in the accounts proper, as these were thought to be more difficult to alter.[1] Yet it is clear, as Mr. de Ste. Croix points out, that in fact Arabic numerals were being used, though not widely, for account-keeping in Tuscany by the end of the 13th century, and right at the beginning of the century Leonardo Pisano, the foremost mathematician of his time, had demonstrated in his *Liber Abbaci* (1202) the superiority of the Arabic notation for accounting as for other purposes.

Mr. de Ste. Croix's thesis is that it was men like Leonardo who "were responsible for the introduction into Europe of the practice of arranging figures—Arabic figures—in accounts in

[1] It is interesting to see excessive caution putting a brake on accounting progress here, just as the suspicion of loose-leaf records did during the first quarter of this century.

regular columns . . . " and that, stimulated by the expanding economy of the later Middle Ages,

> Once figures began to be disposed in a *single* column, instead of being scattered all over the page and reduced to order only outside the account-book, on the abacus or in the mind, the advantages of having *two* clearly separated columns, simply to facilitate computation, would very quickly become apparent; and this would of itself result in the emergence of the bilateral form of account, with debits and credits visibly distinguished. The final step, the further advance to double entry, could then equally well be made by those (no doubt still the large majority) who continued to employ Roman numerals.

This may be so. We shall probably never reach the final truth on this matter. I would only point out that the speed with which a clerk could add on an abacus would be considerably increased if, instead of having to search in a narrative account for the figures he wanted, these were systematically set down in columns. This would be just as true for one numerical notation as another. The growth in the volume of transactions as medieval trade expanded would, therefore, have provided a stimulus to the tabulation of figures, for the sake of those using an abacus, even if Roman numerals had not been superseded.

THE FORMATIVE YEARS OF ACCOUNTING

From what we know of English manorial and household accounts of the early Middle Ages, accounting in this country at that time seems still to have been in much the same state as the Romans had left it in, despite the fact that by the end of the thirteenth century manorial accounting was being taught at Oxford. But in Northern Italy, the golden age of accounting was about to dawn. In a masterly survey of the medieval period down to 1500, by which time Pacioli had published the first treatise on double-entry book-keeping in Venice, Raymond de Roover, drawing on what is probably an unrivalled knowledge of the sources in not one but half-a-dozen European countries, gives us a detailed picture of the beginnings of modern accounting.[1]

The view, once held, that Pacioli was the first and sole inventor of double-entry—a claim he never made himself—has long been discredited. His treatise, published in 1494, may not even have been the first written on the subject. Moreover, we

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[1] "The Development of Accounting Prior to Luca Pacioli according to the Account-Books of Medieval Merchants": *Studies in the History of Accounting*, pp. 114-174.

now know of many sets of books kept by double-entry from early in the fourteenth century onwards. There are even fragmentary records from before 1300 which may have been parts of a double-entry system, though opinions differ as to whether they were or not.[1]

The accounts of the stewards (*massari*) of the Commune of Genoa for the year 1340 have for many years been accepted as being the oldest genuinely double-entry accounts known to us. Though we do not have any earlier records of the *massari*, it seems likely that the same system was in use from 1327, when the Commune's book-keeping arrangements were overhauled as a result of several frauds. The ledger sets out debits and credits in tabular two-sided accounts, a form already much more common in Genoa and Northern Italy than in Florence and the rest of Tuscany, and every transaction is entered twice. The Genoa accounts reveal, incidentally, an ingenious method of raising public loans without contravening the Church's ban on usury. The Commune purchased merchandise—pepper, silk, sugar, wax—on credit and sold it for cash at a loss. This method of raising funds by buying on credit was, it seems, not uncommon in the Middle Ages. The device is still used in some of the under-developed countries.

Recent research has brought to light new records of earlier date in a number of Tuscan cities, but especially Florence, which have some at least of the distinguishing features of double-entry, though the ledger accounts, where we have them, are usually still in the narrative or paragraph form of the pre-double-entry era. It would not be worth while, here, to follow Professor de Roover in his discussion whether they do or do not pass the double-entry test. What is important is that we now have a picture which shows double-entry developing simultaneously in a number of centres in Italy between 1250 and 1350, and being fully developed in principle though not, of course, in detail, by the end of that period.

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[1] A complete double-entry system is one which recognizes that every transaction can be analysed in two different ways, i.e. according to answers to the questions (1) " *What kind* of benefit was gained or given up? " and (2) " *What was the source or destination* of the benefit gained or given up? " As there are for any business many transactions to be analysed, the quantitative answers to these two questions are, so to speak, filed away in the ledger accounts. There will, in a complete system, be accounts for incomes, expenditures, assets, liabilities and for the proprietor's equity. It is the last which makes a double-entry system balance, and which essentially distinguishes double-entry from single-entry, for single-entry does not have proprietorship accounts. Unless a substantial part of the records relating to a particular business have survived, it may be difficult to say whether its system was a " balanced " one or not.

Professor de Roover attaches considerable importance to partnership as a factor in the development of accounting. Clearly, it introduces two important new elements. The firm becomes an accounting entity distinct and separate from its proprietors; and the striking of an accurate profit figure becomes altogether more important, for the rights of the partners relative to each other depend on it.

The considerable complexity which Italian business organization had attained during the fifteenth century, and the way in which accounting methods had already developed to meet the new demands made on it, are well illustrated by the history of the Medici Bank, which was founded in Florence in 1397 and which flourished throughout most of the ensuing century.[1] At one time, the bank had five branches in Italy, in addition to its head office in Florence, and four abroad—in Avignon, Bruges, Geneva (later moved to Lyons) and London. In addition to their banking activities, the Medici controlled three textile manufacturing shops in Florence. Each branch and the manufacturing enterprise was organized as a separate partnership with its own books. The Medici held a controlling interest in each partnership, the businesses being managed by active resident partners.

An examination of the bank's records shows that the best accounting practice of the early fifteenth century was in several respects in advance of the earliest treatises on the subject written much later. Each branch, for instance, had several ledgers rather than a single ledger and a balanced set of final accounts could be prepared from the combination of ledgers. The books were closed and balanced at least once a year, and a copy of the balance sheet was sent to Florence, sometimes with a report from the manager. Some of the specimens which are still extant bear witness to the fact that they were carefully scrutinized, especially for bad debts. In one of the branch balance sheets, a debt due from a deceased cleric is noted as being doubtful of recovery because his surety, a layman, is indifferent to the threat of excommunication which, as papal bankers, the Medici could bring down on his head for failing to pay over Church revenues. Provisions for bad debts were commonly made, and so were provisions for accrued

[1] Professor de Roover has written more fully on the Bank in his *The Medici Bank; Its Organisation, Management, Operations, and Decline* (New York, 1948): but much of the accounting material on which he writes in his present study has come to light since his book was written.

wages and reserves for contingencies. Not all the modern touches are equally praiseworthy, however. In the balance sheet of the Bruges branch for 1464, it is noted that as profits are small, the bank's depositors have not been credited with the interest due to them. As de Roover puts it, " 'window-dressing' does not seem to be anything new, either."

Outside Italy, the standard of accounting by 1500 was in no way comparable, to judge from the rather fragmentary evidence. This is somewhat curious, because although treatises on book-keeping " after the Italian manner ", as double-entry was still called as late as the eighteenth century, did not become available until 1494 in Italy and later still in other countries, the foreign branches of some Italian merchants and banks were using the system and one might have expected the expatriate Italians to influence the merchants among whom they lived. The Borromeo Bank, of Milan, opened a branch in London in 1436 for example, and its ledgers for the years 1436-39, which are still extant, reveal a high level of accounting. Yet English merchants did not approach this level till a century later. It is usual to explain this backwardness outside Italy by saying (as de Roover does) that, not having such elaborate business organizations as the Italians, other countries did not feel the need for such refined accounting methods. No doubt this is true. Whether the argument can then be turned round, so as to make the lack of refined accounting methods a contributory factor of economic backwardness—a pirouette which de Roover skilfully executes—is much more doubtful.

BOOK-KEEPING AND THE RISE OF CAPITALISM

This brings us to one of the most interesting questions raised by a study of the history of accounting. Did the emergence of double-entry in the fourteenth and fifteenth centuries, and its subsequent spread, play a vital part in the rise of modern capitalism, by facilitating the measurement of profit and hence making possible the rational direction of investment and enterprise? Many authorities both on capitalism and on the history of accounting—Max Weber, Sombart, Nussbaum, Schumpeter, de Roover and Littleton among them—have leaned to this view.

The argument is not merely that systematic book-keeping made for better control of business. What is in issue concerns business planning rather than control. Those who think that the rise of double-entry was synonymous with the development

of a rational approach to profit-seeking have generally based their view on broad grounds of probability, rather than a detailed examination of cases. " One can scarcely conceive of capitalism without double-entry book-keeping: they are related as are form and content ".[1] Only recently has research into book-keeping records in medieval Italy, especially Tuscany, begun to give substance to the view that it was as an improved method of profit measurement that double-entry was valued.

The case " against " double-entry, so to speak, has perhaps been put best by one of the editors of this collection, Mr. B. S. Yamey, both in his introduction and more fully in an earlier paper published elsewhere.[2] Basing his view on a careful study of the early book-keeping treatises, he concludes that profit measurement was not considered an important advantage of double-entry, as is evidenced by the infrequency with which books were balanced and profit figures and a balance sheet drawn up. Balancing, when it is done at all, serves predominantly to provide a check on the arithmetical accuracy of the books. " Throughout the period the process of balancing . . . appears to have served limited objectives of a technical ' book-keeping ' nature ".[3]

On neither side of the argument is the evidence conclusive. As de Roover has pointed out, because Pacioli's treatise is based on Venetian practice and so many of the later treatises derived so much from Pacioli, neither his book nor its successors can be relied on to give an adequate description of the procedures outside Venice. It so happens that Venetian accounting was marked by infrequent balancing.[4] And since it was concerned so much with maritime trade, it leant heavily towards " venture " accounting: that is, towards keeping separate accounts for each voyage or venture on which the trader embarked. In this kind of accounting, so long as separate profits and losses on each venture are being calculated, a general balancing of the books does not have much significance from the point of view of business direction.

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[1] W. Sombart, *Der Moderne Kapitalismus* (6th Ed. 1924) Vol. II, part 1, p. 118.

[2] " Scientific Book-keeping and the Rise of Capitalism " in *Studies in Accounting* (ed. W. T. Baxter, 1950), pp. 13-30.

[3] Yamey, *loc. cit.*, p. 26.

[4] Too much should not be made of Venetian slackness in this respect. Pacioli's advice on this matter is sound enough. " It is always good to close them [i.e. the ledger accounts] each year ", he writes, " especially he who is in partnership as the proverb says—frequent accounting tends to lasting friendship ".

ACCOUNTING IN TUDOR ENGLAND

Reference was made earlier to the relatively backward state of accounting outside Italy, at a time when so much progress was being made inside that country. In England, by 1550 we had reached a stage which the Italians had reached a hundred years earlier. Mr. Peter Ramsey's examination of some Tudor merchants' accounts throws light both on the state of accounting in England at that time and on the contribution of double-entry to rational profit seeking.[1] One of the ledgers he writes about is the earliest known example of a ledger kept by double-entry in England. It belonged to Thomas Howell, a member of the Drapers' Company engaged mainly in the Spanish trade, and it contains entries for the years 1522-26. It is kept in Roman numerals still and has the debit entries on the left-hand page, the credit on the right.

Of these Tudor records, it is perhaps the journal of Sir Thomas Gresham for 1546-47 which is of greatest interest to us, in part because of Gresham's eminence as a merchant. Like so many account books of its kind, it opens with a resounding dedication:

> In the name of God, Amen. This present boke shalbe the Jornall called & apperteyning to me Thomas Gresham of London mercer for therin to wryte with my owne hande or els with the hand of my prentys Thomas Bradshawe alle my hoole trayne and doynges and out of the said Jornall to wryte it into the greate booke called the Leger which shalbe holden by poundes shillinges and pence of money of Englande. Pleaseth God to give me profytt and prosperitye to defend me from evill fortune losse and damage. Amen.

Then follow two hundred folios which show in detail how Gresham's business was conducted. Amounts were written in the narrative of the journal in Arabic figures but were extended into a single money column in Roman numerals.

The entries in the journal were roughly in chronological order. No attempt was made to group purchases or sales or to segregate cash or bill transactions into specialized books. One important feature is that a separate trading account was kept for each commodity dealt in, so that the profitability of different commodities could be determined. Trading profits on one or other of these accounts were struck from time to time, unsold goods being valued for this purpose at cost price: but the accounts were never all balanced together, so

[1] "Some Tudor Merchants' Accounts": *Studies in the History of Accounting*, pp. 185-201.

that the total profit for a period was never arrived at, at least so far as can be discerned from the books. A single-entry type of profit calculation was most probably resorted to. This and other features of the accounts of Gresham and of the other Tudor merchants he considers leads Mr. Ramsey to share Mr. Yamey's scepticism as to the importance which early users of double-entry attached to its use as a profit-measuring technique.

PACIOLI AND HIS INFLUENCE

By Gresham's time, the earliest treatises on double-entry book-keeping had made their appearance—six in Italy (of which four were Venetian), two in Germany, one in the Low Countries, one in Spain and one in England. Of these, Pacioli's, the first of them all, and Hugh Oldcastle's, the first in England, have a special interest for us.

Luca Pacioli was born at Borgo San Sepolcro (between Florence and Perugia) between 1445 and 1450.[1] As a young man he was a pupil of Piero della Francesca, and afterwards went as a tutor to the family of a Venetian merchant. During the six years that he spent in Venice, he no doubt learnt much about commerce, and this may have given him an interest in book-keeping. After joining the Order of the Franciscans Minor at about the age of 25, he spent most of his life in teaching mathematics at universities and courts up and down Italy and his work on book-keeping consists of one section of a treatise on mathematics which he published in 1494.[2] He also published other mathematical works. Nothing is heard of him after 1514, when he received a papal summons to teach at the Academy in Rome, and the date of his death is not known. In spite of his authorship of a book on chess, he emerges as a somewhat sombre personality, and this impression is reinforced by the portrait of him attributed to Jacopo de Barbari which now hangs in the Naples museum.

It is not now thought that much, if any, of Pacioli's work on book-keeping was original, even as an account of " the method employed in Venice ", as he described it. But original or not, it (or the unacknowledged manuscript on which his book was based) became the model for countless later works.

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1 " Luca Pacioli ", by Professor R. Emmett Taylor: *Studies in the History of Accounting*, pp. 175-184. Professor Taylor has published a full-length biographical study of Pacioli, entitled *No Royal Road. Luca Pacioli and his Times* (University of North Carolina Press, 1942).

2 *Summa de Arithmetica, Geometria, Proportioni et Proportionalità*. The section on book-keeping is called *De Computis et Scripturis*.

Some of them are little more than translations. It is hardly too much to say that Pacioli's grip on the subsequent development of book-keeping is comparable only to Aristotle's hold on natural philosophy, though it did not last so long; or rather, since Pacioli did not originate anything, through him the methods used in Venice at the end of the fifteenth century took on a canonical authority in matters of detail which led, in the seventeenth and eighteenth centuries, to what de Roover has called " a period of stagnation ". Indeed, it took the advent of mechanization in our own day to sweep away such useless relics as " to " and " by ", and a whole lot of clutter with which practitioners of the art have been wont to turn a useful technique into a mystery.

In England, the first to follow where Pacioli led was Hugh Oldcastle, teacher of arithmetic and book-keeping in the parish of St. Olave's in the City of London. Of his book, *A profitable treatyce called the instrument or boke to learne to know the good order of the kepyng of the famous reconyng, called in latin Dare et Habere, and in Englyshe Debitor and Creditor*, published in 1543, no copy has come down to us, and it is known only through a reprint issued by John Mellis in 1588. It is sufficiently different from Pacioli's work to pass as more than a translation, but it nevertheless follows its Italian model closely.

It is closely followed, in its turn, by the second English book on book-keeping, *The Maner and fourme how to kepe a perfecte reconyng, after the order of the moste worthie and notable accompte, of Debitor and Creditor*, by James Peele, 1553, although, as we know Oldcastle's book only through Mellis's 1588 reprint, we do not know whether and to what extent Peele borrowed from Oldcastle or Mellis borrowed from Peele. By the middle of the century, English merchants had no excuse for continuing ignorance of double-entry, for after 1547 they had also an English translation (via the French) of Ympyn's *Nieuwe Instructie*, which was itself a Dutch translation of an Italian manuscript which had come into Ympyn's hands. Mr. R. R. Coomber, who contributes an essay on Oldcastle to the present collection,[1] suggests that both he and Pacioli may have used the same manuscript as Ympyn, which the latter acknowledged as being by one Juan Paolo di Bianchi.

Who can say where authorship ends and plagiarism

[1] *Op. cit.*, pp. 206-214.

begins? Nearly all these old writers on book-keeping added something to the clarification of the subject, if not always to its development. Their books, and the many which followed them during the next 200 years, are not less distinctive, one from the other, than our modern text-books; and their titles—*The pathewaye to perfectness in the accomptes of Debitour and Creditour; The Merchant's Mirrour; The Apprentices Time-Entertainer accomptantly; Amphithalami, or, The Accomptants Closet*—have an alluring quality which we, with our eternal Principles, Elements, Introductions and the rest, have long since lost.

THE FUTURE OF DOUBLE-ENTRY

We cannot here follow the subsequent history of accounting down to the present day. Much of the story can be found in these *Studies*. Probably it could have been said of the vast majority of small businesses during the last 600 years, as in fact it was said of the Japanese in 1640, that " they have not the Italian Manner of Keeping Books, and yet fail not in their Calculations ". But it is unlikely that the growth in the size of businesses which took place during the nineteenth century, made possible as it was by the spread of limited liability and joint stock, could have been so fruitful if a system of orderly account-keeping had not been readily to hand; and although orderly account-keeping and the " Italian manner " are not necessarily synonymous, they have usually gone together.

This fact seems to have been recognized exactly a century ago in the Joint Stock Companies Act of 1856, for the model set of articles contained in Table B of the Act (which became Table A of all later Acts) required that " The Directors shall cause true accounts to be kept . . . Such Accounts shall be kept, upon the Principle of Double Entry, in a Cash Book, Journal and Ledger ".[1] This specification that the accounts should be kept by double-entry, which of course a company could avoid by modifying or not adopting Table B, has not survived to the present day, but the more stringent accounting regulations enacted in later statutes have really made such a requirement superfluous.

It is possible that we may already have seen double-entry pass its zenith. At least before long it may come in for rough handling. Its great virtue—perhaps the only one it does not

[1] Quoted by H. C. Edey and P. Panitpakdi in their essay on " British Company Accounting and the Law 1844-1900 ", *op. cit.*, p. 362.

share with less elegant methods—is that, as every transaction is recorded twice, the balancing of the books provides a *prima facie* proof of their accuracy. The more we reduce the scope for human fallibility, the more we play down double-entry's strength. This is exactly what the mechanization of accounting has been doing, and what its " electronification " will do even more. We no longer have to look to double-entry to ensure that " it is impossible for an error of the most trifling amount to be passed unnoticed ".[1]

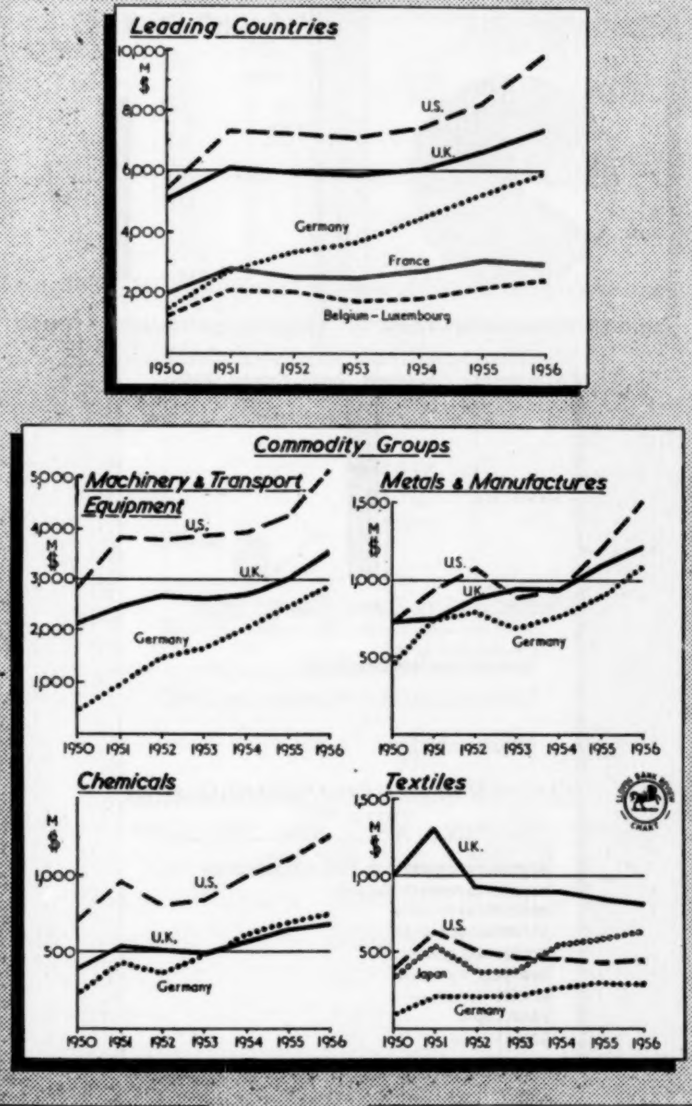
There is another reason why double-entry as it has hitherto been practised may now call for radical modification. Traditionally, accounting has been based on the so-called " cost principle ". When a business acquires assets, it enters them, and continues to carry them, on the books at cost, except in so far as it is necessary to recognize any *loss* in market value of current assets or the diminution in value of fixed assets through their loss of expectation of life. The records remain anchored to historic cost. Changes in the value of money are ignored. A monetary unit which bears the same name at two dates is taken to be the same thing. It goes without saying that this belief has been shaken by recent monetary upheavals but it has survived nevertheless. It may have survived because the " cost principle " seemed to be implicit in double-entry. If accountants are ever driven to recognize that £'s at different dates are different things, index number techniques are ready to hand to put this recognition into effect. These techniques will not abrogate double-entry; but they will transform it, as perhaps nothing else since 1494 has done, into something which Pacioli would be hard put to it to recognize.

DAVID SOLOMONS.

Bristol.
September, 1956.

[1] These words form part of the title of Edward Jones's *English System of Book-keeping* . . . (1796). Jones and his contemporaries are the subject of an essay by Mr. B. S. Yamey, *op. cit.*, pp. 313-324.

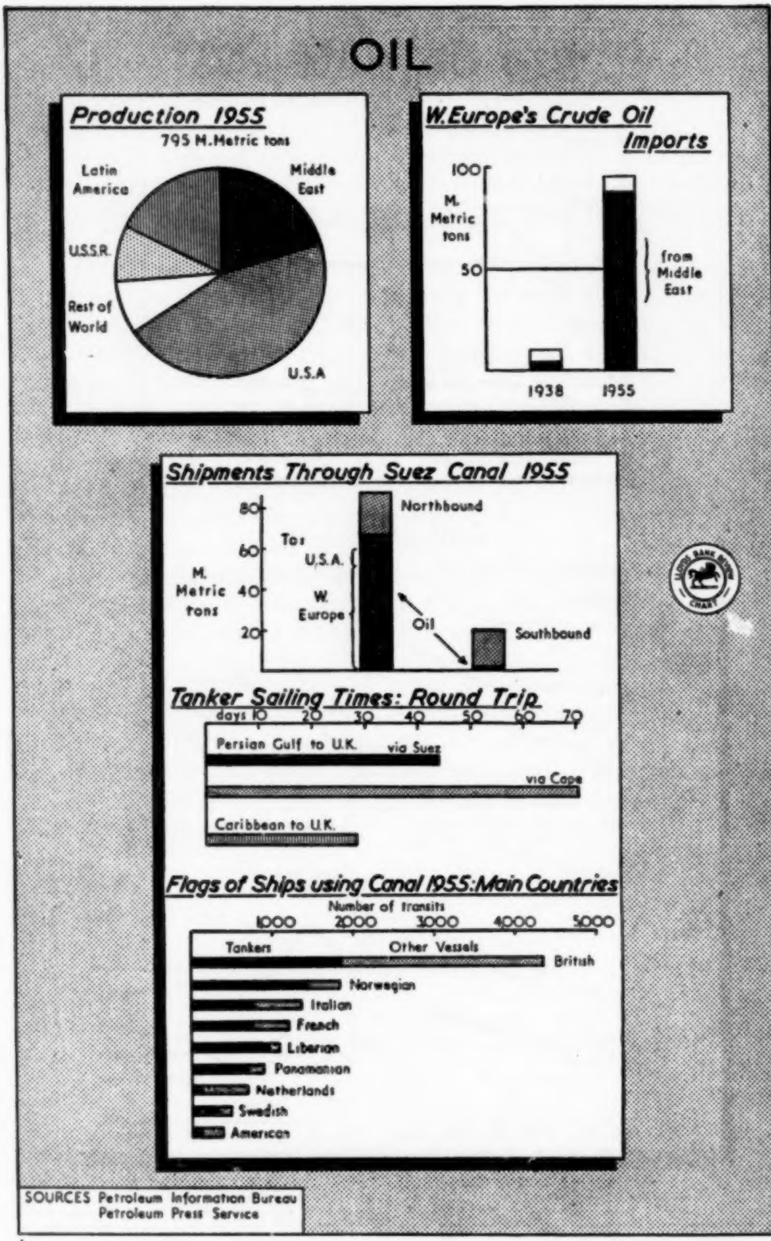
EXPORTS OF MANUFACTURES



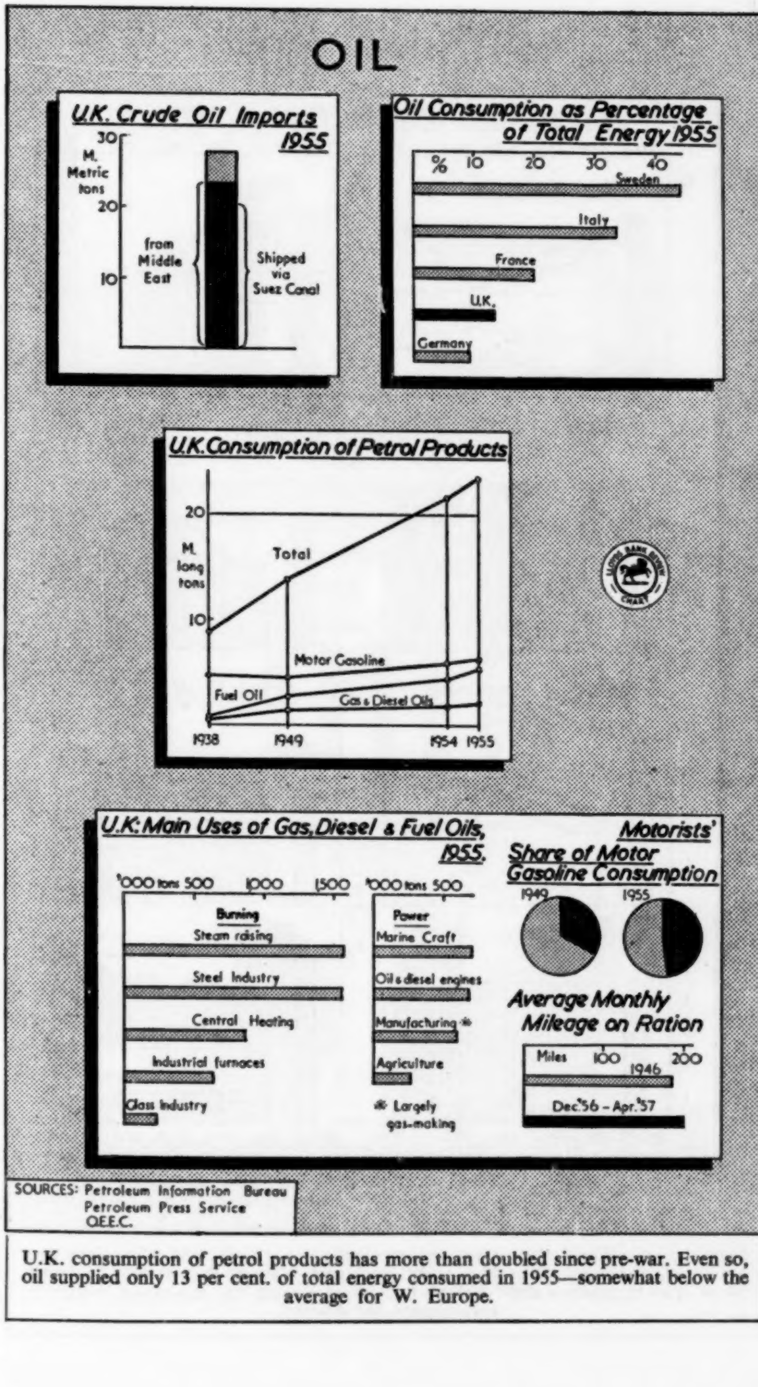
SOURCE: Board of Trade Journal

Note: 1956 figures are first six months at annual rate

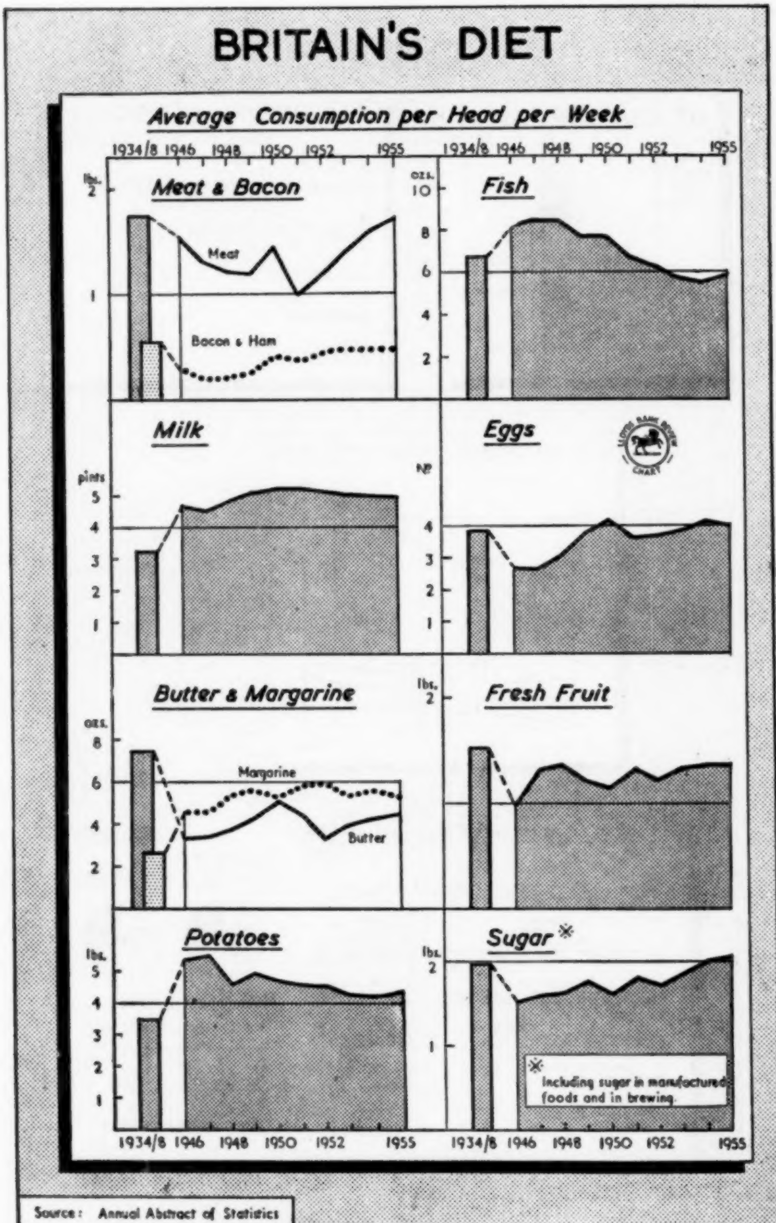
Although our exports of manufactures rose by 11 per cent. in 1956 (as measured by the experience in the first six months), this was less than the rate of increase recorded by either the U.S. or Germany. Of the above groups, U.K. exports of machinery etc. rose by 18 per cent., while textiles continued to decline.



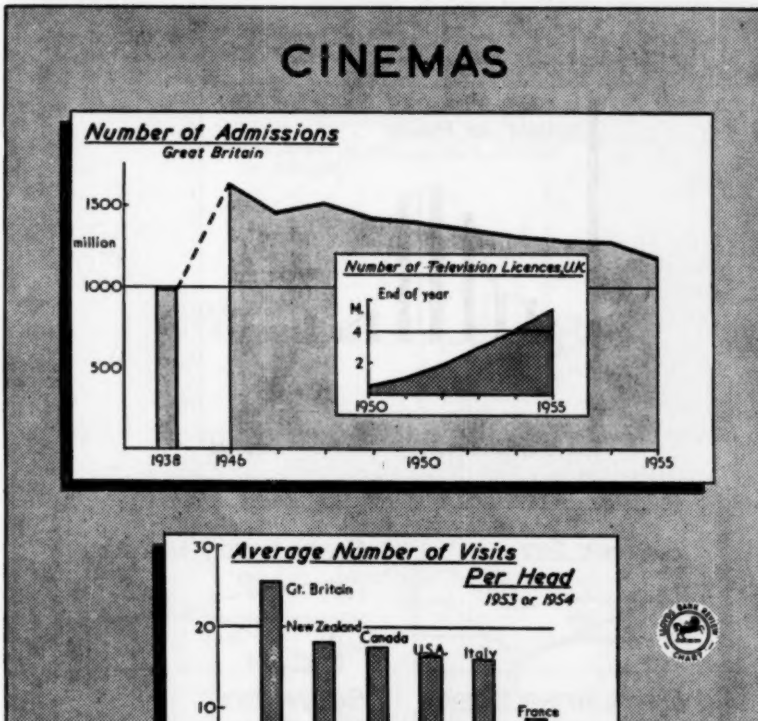
In 1955 the Middle East accounted for a fifth of total world oil production. The area supplied the bulk of W. Europe's oil imports and for the U.K. alone over 80 per cent. Oil made up over three-quarters of north-bound shipments through the Suez Canal and of total U.K. crude oil imports over 70 per cent. came via Suez.



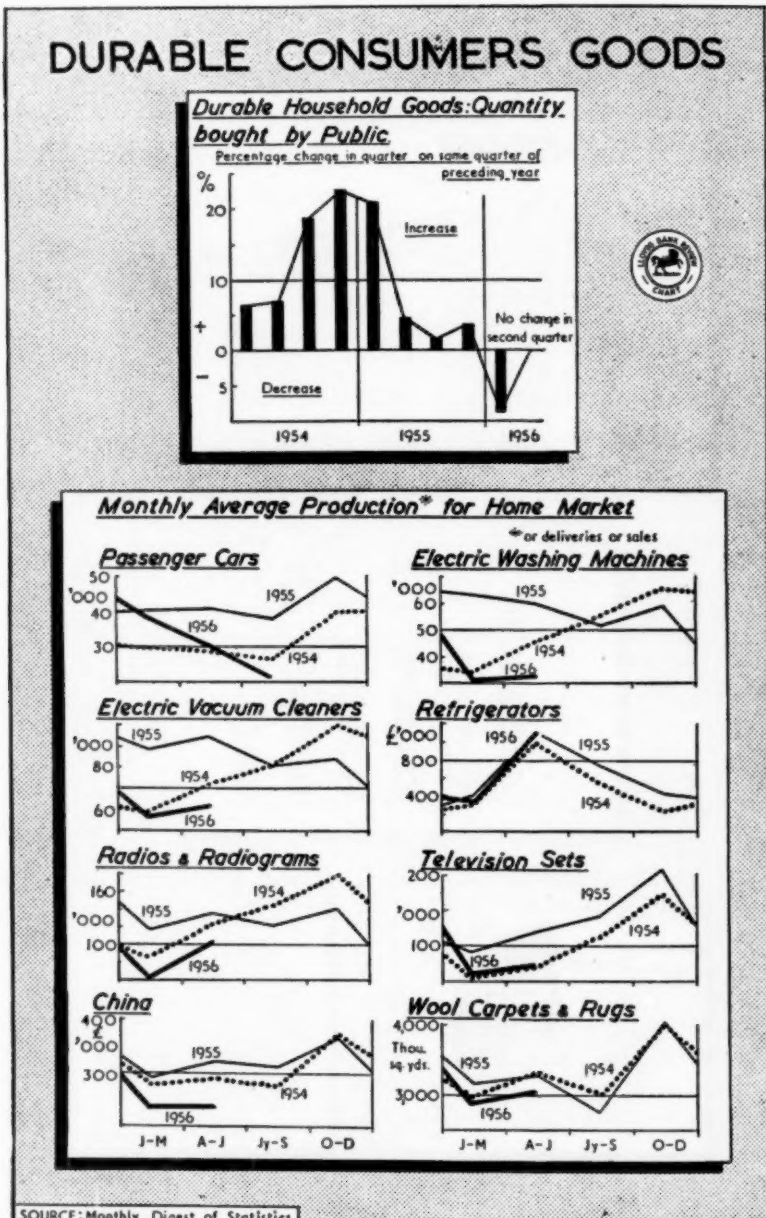
U.K. consumption of petrol products has more than doubled since pre-war. Even so, oil supplied only 13 per cent. of total energy consumed in 1955—somewhat below the average for W. Europe.



Consumption per head of some foods has regained pre-war levels; with others there have been marked changes. Over 50 per cent. more milk is drunk than in 1934/8, though recent years have seen a slight decline. Less butter is eaten but, in contrast, margarine consumption has doubled.

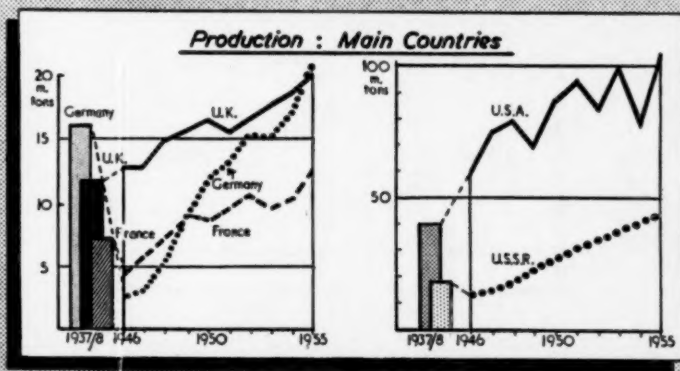


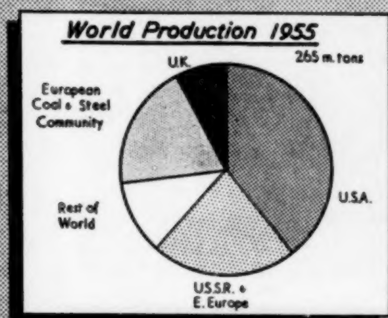
The total number of admissions to cinemas has been falling for some years, although it remains higher than in 1938. It also appears that, on the average, in Great Britain people visit the cinema more often than in most other countries.

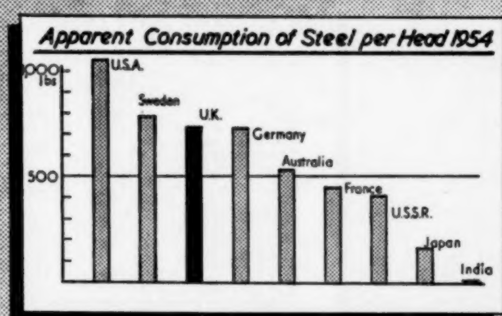


In the first nine months of 1956 the public's purchases of durable household goods was 5 per cent. down on the year, compared with an increase of 8 per cent. in the corresponding period of 1955.

STEEL



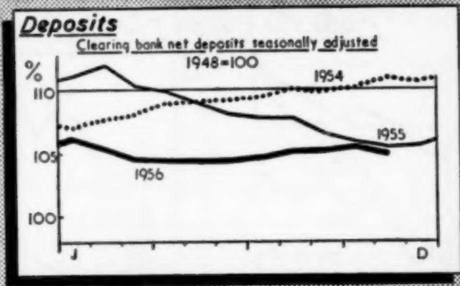


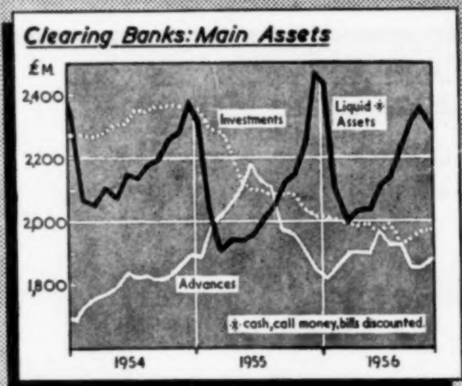


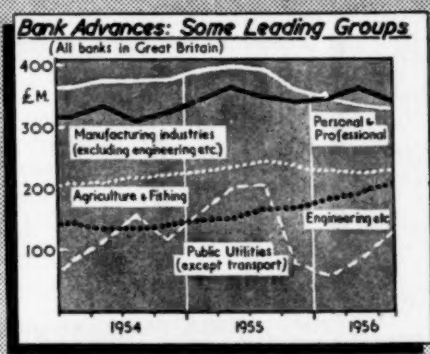
Sources: British Iron & Steel Federation Statistical Bulletins & Reports, U.N. & O.E.E.C. Publications

Production in W. Germany now somewhat exceeds our own. In 1955 American production was more than two and a half times greater than in 1937/8 and approaching twice the output of the U.S.S.R. and Eastern Europe.

BANKING







SOURCES: London Clearing Bankers
British Bankers' Association.

In November, Lloyds Bank's index of deposits showed the first decline for some months. During the credit squeeze, personal advances have fallen steeply; some exporting industries, such as engineering, have borrowed more.

Mardon, Son & Hall, Ltd.,
Bristol.